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PRESENTATION OF THE ALBERT MEDAL FOR 1957

His Royal Highness The Duke of Edinburgh, President of the Society, presented the Albert Medal for 1957 to Sir Christopher Hinton, K.B.E., F.R.S., at Buckingham Palace on Tuesday, 9th July. It was announced in the *Journal* for 21st June that the medal had been awarded to Sir Christopher 'for his outstanding leadership in nuclear power development'.

Lady Hinton accompanied Sir Christopher at the presentation, which was also attended by the following Members of Council: Sir Alfred Bossom (Chairman); Mrs. Mary Adams; Dr. W. Greenhouse Allt; The Honourable G. C. H. Chubb; Sir Edward Crowe; Mr. Robin Darwin; Mr. Peter A. Le Neve Foster; Mr. John Gloag; Sir Ernest Goodale; Mr. Milner Gray; Sir William Halcrow; Mr. A. C. Hartley; Dr. R. W. Holland; Mr. William Johnstone; Mr. E. E. Lawley; Sir Herman Lebus; Sir Harry Lindsay; Mr. F. A. Mercer; Mr. Oswald P. Milne; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Professor L. Dudley Stamp; Sir Stephen Tallents; Mr. H. A. Warren; Sir Griffith Williams and Miss Anna Zinkeisen; with Dr. K. W. Luckhurst (Secretary) and Mr. G. E. Mercer (Deputy Secretary).

In presenting the medal, His Royal Highness said that it gave him great pleasure to make this award to Sir Christopher Hinton in recognition of his outstanding work for nuclear development. Sir Christopher Hinton in reply said that he was honoured both by the award of the medal itself and by the privilege of receiving it from the hands of His Royal Highness at the Palace. He added that he was particularly pleased by the fact that by this award atomic engineering was now recognized as an 'art'.

ELECTION OF CHAIRMAN OF COUNCIL

At the meeting of the Council held on 8th July, Sir Alfred Bossom, Bart., LL.D., F.R.I.B.A., J.P., M.P., was unanimously elected Chairman of the Council for the coming year.

MEETING OF COUNCIL

A meeting of Council was held on Monday, 8th July, 1957. Present: Sir Alfred Bossom (in the Chair); Mrs. Mary Adams; Dr. W. Greenhouse Allt; The Honble. G. C. H. Chubb; Sir Edward Crowe; Mr. Robin Darwin; Mr. P. A. Le Neve Foster; Sir Ernest Goodale; Mr. A. C. Hartley; Dr. R. W. Holland; Lord Latham; Mr. E. E. Lawley; Sir Herman Lebus; Sir Harry Lindsay; Mr. F. A. Mercer; Mr. O. P. Milne; Mr. A. R. N. Roberts; Mr. E. Munro Runtz; Professor R. D. Russell; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Sir Stephen Tallents and Mr. G. E. Tonge; with Dr. K. W. Luckhurst (Secretary); Mr. G. E. Mercer (Deputy Secretary) and Mr. J. S. Skidmore (Assistant Secretary).

ELECTIONS

The following candidates were duly elected Fellows of the Society:

Brayne, Peter Harold, Sherwood, Nottingham.
Burnell, Raymond Cliffe, Melton Mowbray, Leicestershire.
Chase, George Haswell, Worcester Park, Surrey.
Dorne, Albert, New York City, U.S.A.
Engström, Professor Arne Vilhelm, M.D., Stockholm Va, Sweden.
Fowler, Cyril, Hemel Hempstead, Herts.
Fredenham, Miss Evelyn Ann, London.
Green, John Alfred, Ipswich, Suffolk.
Hydén, Professor Viktor Holger, M.D., Gothenburg, Sweden.
I'Anson, Charles John, Worcester.
Illingworth, Kenneth, D.F.A., A.T.D., Preston, Lancs.
Langley-Taylor, George, F.R.I.B.A., F.R.I.C.S., London.
Lee, Richard Atkinson, Kuala Lumpur, Malaya.
Neutra, Richard Joseph, F.A.I.A., Los Angeles, California, U.S.A.
Paviour, Paul, Bedford.
Pople, James, B.A., Sheffield, Yorkshire.
Redisch, Professor Walter, M.D., New York, U.S.A.
Rex-Hassan, Cyril, London.
Schlicher, Professor Karl, M.S., Ph.D., Nacogdoches, Texas, U.S.A.
Sert, Jose Luis, M.A., M.Arch., Cambridge, Massachusetts, U.S.A.
Taylor, Mrs. Joan, Worcester Park, Surrey.
Young, Arthur Harry, A.M.I.E.E., London.

VACANCY ON COUNCIL

Professor S. Tolansky, F.R.S., was elected an Ordinary Member of Council to fill the vacancy created by the resignation of Dr. Barnes Wallis, which had taken place since the Annual General Meeting.

BENJAMIN FRANKLIN MEDAL

A letter was received from the President regarding the procedure to be established for the presentation of the newly-instituted Benjamin Franklin Medal, in which His Royal Highness stated his agreement with the Council's suggestion that the Medal should normally be presented by himself, but on some occasion other than that of the presentation of the Albert Medal.

The Selection Committee for the next award was appointed.

OTHER BUSINESS

A quantity of financial and other business was transacted.

TWO HUNDRED AND THIRD ANNUAL GENERAL MEETING

WEDNESDAY, 26TH JUNE, 1957

R. W. HOLLAND, O.B.E., M.A., M.SC., LL.D.,

Chairman of Council of the Society, in the Chair

The Two Hundred and Third Annual General Meeting was held on Wednesday, 26th June, 1957, at 3 p.m., at the Society's House, in accordance with the Bye-Laws, for the purpose of receiving the Council's Report and the Financial Statements for 1956, for the election of officers, and for the amendment of Bye-Laws.

The Secretary read the Notice convening the meeting and proved that it had been duly exhibited and published, as required by the Bye-Laws.

The Minutes of the last Annual General Meeting, held on 4th July, 1956, and of the Special General Meeting on 12th February, 1957, were then taken as read, the Secretary having summarized their contents, and were signed by the Chairman as a correct record.

The Chairman then called upon the Secretary to summarize the Annual Report of the Council:

ANNUAL REPORT OF THE COUNCIL

203rd SESSION, 1956-1957

I. H.R.H. THE PRESIDENT

His Royal Highness the President visited the Society's House on 19th July to present the Albert Medal for 1956 to Sir Henry Dale, and on 10th May he took luncheon with the Faculty of Royal Designers for Industry.

II. ALBERT MEDAL

With the approval of the President, the Albert Medal for 1956 was awarded to Sir Christopher Hinton, K.B.E., F.R.S., 'for his outstanding leadership in nuclear power development'.

III. ROYAL DESIGNERS FOR INDUSTRY

Mr. Milner Gray served as Master during the year 1956-57, and Professor R. D. Russell as Deputy Master.

The following new appointment has been made to the Distinction:

Misha Black, O.B.E., F.S.I.A., M.Inst.R.A.
(*exhibition and interior design*)

The presentation of the Diploma to Mr. Reynolds Stone, who was appointed last year, was made at a special meeting of the Society held on Thursday, 13th December. This was followed by an Oration by Sir Gordon Russell, Past-Master of the Faculty.

The Faculty held their seventh Annual Reception at the Society's House on 7th December, and on 10th May they were once again honoured by the presence at luncheon of H.R.H. the President. Among other functions of the Faculty were a sherry party given to mark the sixtieth anniversary of the founding of the L.C.C. Central School of Arts and Crafts, and a dinner in honour of Professor Alvar Aalto, Hon. R.D.I. At the invitation of the Council of Industrial Design, a panel of judges from the Faculty chose 12 'Designs of the Year' from the goods displayed at the Design Centre during its first year.

IV. BICENTENARY MEDAL

The fourth Bicentenary Medal, which is for award annually to persons who 'in a manner other than as industrial designers' have exerted an exceptional influence in promoting art and design in British industry, has been awarded to Sir Ernest Goodale, C.B.E., M.C.

The third Bicentenary Medal, which, as reported in the last Annual Report, was awarded to Dr. W. J. Worboys, was presented by the Chairman of Council at a Special Meeting of the Society on 7th December.

V. R. B. BENNETT EMPIRE PRIZE

In accordance with a recommendation of the Commonwealth Section Committee regarding the award of this prize for 1957, the Council has submitted a name for the approval of H.R.H. the President.

The Council has decided, on the recommendation of the Commonwealth Section Committee, that the prize should in future be known as 'The R. B. Bennett Commonwealth Prize', and that it should be offered 'for an outstanding contribution to the promotion of the arts, agriculture, industries and commerce in the Commonwealth overseas'.

VI. BENJAMIN FRANKLIN MEDAL

The Council this year made the first award of the Benjamin Franklin Medal, the institution of which commemorates the 250th anniversary of Franklin's birth and the 200th anniversary of his election to membership of this Society, both of which occasions fell in 1956. The medal is for presentation to 'individuals who have attained early distinction, with promise of future achievement, in the promotion of arts, manufactures and commerce', and with the approval of H.R.H. the President the 1957 award was made to Professor Frederic C. Williams, O.B.E., D.Sc., M.I.E.E., F.R.S., 'for his contributions to electrical engineering'.

The medal was designed by Mr. Christopher Ironside, whose drawings of it were illustrated on page 184 of the *Journal* for 1st February, 1957.

VII. EXTENSION OF THE SOCIETY'S PREMISES

Undoubtedly the outstanding event for the Society during the past 12 months, and indeed a landmark in its long history, has been the recent extension of its premises.

After long and careful consideration and negotiation, in which Lord Nathan played a particularly important part, the Council were fortunate in obtaining a 99 years' lease, dating from 31st May, 1957, of Numbers 2 and 4 John Adam Street, and Number 18 Adam Street, the houses adjacent to on the east, and contemporary with the Society's own House, being similarly designed by the brothers Adam. The Society also has the option to purchase the property from the new owners, the Legal and General Assurance Society Limited, between the 14th and 21st years of the lease, and the Council would like to acknowledge the parts played by that Society, and by the former owner,

Mr. H. H. Wingate, in making the acquisition possible on such terms. Full details and illustrations of the buildings were given on pages 435-436 of the *Journal* for 26th April, 1957. Suitable tenants for the parts of the building not occupied by the Society itself are being sought, and a temporary sub-lease has been granted to the Wiener Library.

An extension fund to provide for the ultimate purchase of the freehold has now been opened and some gifts towards it have been received.

VIII. EXAMINATIONS

For many years the Annual Reports have called attention to the ever-increasing demand for the examinations conducted by the Society, a demand which demonstrates a wide-spread recognition, not only in this country but also in various parts of the British Commonwealth, of the efforts of the Society to maintain its established standards of certification in general and commercial subjects. This year is no exception, as for the first time the total number of subject-entries has not only exceeded but has soared above the 200,000 mark. The actual total is 220,413, which exceeds the total of last year by 26,413. Following are some comparative details:

	1956-57	1955-56
(a) Ordinary (Single-subject)	175,319	153,173
(b) Oral Tests	5,096	4,551
(c) School and Senior School Commercial Certificates ...	15,485	16,398
(d) School Technical Certificate	2,296	—
(e) Grouped Course	18,386	16,201
(f) Road Transport Subjects	1,292	1,256
(g) Teacher's Certificate in Shorthand	751	618
(h) Teacher's Certificate in Typewriting	376	413
(i) British Transport Commission (Preliminary examination of candidates under Apprenticeship Schemes) ...	1,187	1,146
(j) British European Airways (Special proficiency tests in Shorthand and Typewriting)	126	117
(k) Royal Air Force Administrative Apprentices (Scheme of endorsement of certificates awarded by the Air Ministry)	99	127
	<hr/> 220,413	<hr/> 194,000

This continuing increase is gratifying particularly in view of the fact that the Society has this year cancelled the arrangements under which late entries have hitherto been accepted on payment of an additional fee. This step was taken in an endeavour to reduce the extreme pressure on the Examinations Department when dealing with the very large numbers of entries for the various examinations,

but the decision was also welcomed by many of the local Education Officers in their capacity as local secretaries for the Society's examination centres.

This year's increase is spread over practically all the examinations offered. For the Ordinary (Single-subject) examinations there is a substantial increase of over 22,000; the decrease in the total of entries for the School and Senior School Commercial Certificate examinations is entirely due to a reduced demand for the Senior School Certificate examinations, as the entries for the School Certificate examinations went up from 12,687 to 13,138.

School Technical Certificate

This Session a scheme of examination for the award of a School Technical Certificate has been instituted, similar in structure and general aim to that for the Society's School Commercial Certificate which has been offered since 1927; in many of the subjects the same syllabus applies to both certificates. The new examination is designed for those completing a five-year secondary school course, and the pass level is approaching that of the old General School Certificate. It differs essentially, therefore, from the General Certificate of Education in its lower standard of difficulty and the different class of candidate for which it caters, and also in its structure as a grouped course, since candidates are required to take a minimum of five prescribed subjects. In the preparation of this scheme the Society has endeavoured to institute a form of certification of the work of pupils who find the G.C.E. beyond their intellectual reach and for whom, in fact, that Certificate is not suitable.

The School Technical Certificate has been warmly welcomed by school authorities in all parts of the country, many of whom have expressed their intention to present candidates in the future. For the first examination this year entries have been received from 394 candidates, who, between them, will be taking 2,296 subject-entries.

Miscellaneous

Five Silver Medallists at the Society's examinations in 1956 have been elected to Associate Membership.

The Worshipful Company of Clothworkers has again generously contributed towards the cost of the silver and bronze medals.

A fuller report on the Society's examinations during the past year will be published in the *Journal* in the autumn.

IX. INDUSTRIAL ART BURSARIES COMPETITION

The 1956 Industrial Art Bursaries Competition, which comprised 17 sections, two more than in 1955, continued the encouraging trend of previous years, and marked the increasing interest of industry in fostering good design through the employment of promising young designers. The following fields of industrial design were included:

Acrylic sheet ('Perspex'); carpets; cinema and television settings; domestic

electrical appliances; domestic glassware; domestic solid-fuel-burning appliances; dress textiles; electric-light fittings; footwear; furnishing textiles; furniture; jewellery; laminated plastics; P.V.C. plastics sheeting; pottery; wall-paper, and women's fashion wear.

Two Bianca Mosca Memorial awards, totalling £350 in value, and 14 ordinary bursaries of £150 and eight of £75 each, have been awarded to successful candidates. Also, 11 bursary winners who were eligible for the award of Associate Membership have now been elected.

The Society was fortunate in having so distinguished a supporter of good design as Sir Colin Anderson formally to open this year's exhibition of winning and commended designs, and a report of the ceremony, held on 21st May, was published in the *Journal* for 7th June. Immediately after the closing of the exhibition at the Society's House on 7th June, the designs were exhibited at the High Wycombe College of Further Education, and arrangements have also been made for the exhibition to be shown later this year at the Belfast, Falmouth, Glasgow, High Wycombe, Leeds and Leicester Colleges of Art.

Bursary winners do not always use their awards in the year in which they are won, and of the candidates successful in previous competitions 22 made tours abroad during the year. Although Scandinavia, France and Italy were the countries most visited, Eire, Finland, Holland, Majorca, Monaco, Norway, Switzerland, the United States of America and Western Germany were included in some of the tours, and a number of the candidates also undertook courses of study and visited various factories and studios in this country; details were included in the illustrated report which was as usual published in May, and of which a summary appeared in the *Journal* for 1st March, 1957. Of the winning candidates in the 1956 and previous Competitions, six have already begun their tours on the Continent; and the rest will be setting out, either later this year or in the spring of 1958. Arrangements have also been made for a number of the commended candidates to gain practical experience by visiting factories in this country.

Although one of the main functions of the Competition is to bring to the notice of industry promising designers rather than marketable designs, it is of interest to note that a design submitted by Mr. Frank Watkins, a 1953 Bursary winner, in the Domestic Solid-Fuel-Burning Appliances Section, has recently been put into commercial production by Messrs. Lane & Girvan, Ltd., the Bonnybridge, Stirlingshire, stove manufacturers, who had originally seen it at the Society's Annual Exhibition of Bursary designs, and has aroused considerable interest.

The Council wish to express once again their appreciation of the generous donations from industrial bodies and firms which make this competition possible, and which encourage them, and the Bursaries Board, in their belief in its great value. A similar competition is to be organized in 1957, in which awards of the total value of £3,350 will be offered, and which will cover 17 fields of industrial design. All the sections in the 1956 Competition with the exception of those for domestic glassware and P.V.C. plastics sheeting will be included, together

with two new sections, for the design of packaging and typography respectively. Details were given in an announcement published in the *Journal* for 24th May, 1957.

X. THOMAS GRAY MEMORIAL TRUST

A full and varied range of activities has again been conducted under the auspices of the Thomas Gray Memorial Trust, which was founded in 1925 for 'the advancement of the science of navigation and the scientific and educational interests of the British Mercantile Marine'.

Prizes for Ships' Apprentices

Fifteen prizes were awarded in connection with the examinations conducted by the Merchant Navy Training Board. The prizes consisted of five silver medals, five bronze medals and five nautical instruments.

Scholarships for Deck-Boys and Young Seamen

In 1956 the Trust made a grant of £115 towards the provision of scholarships for deck-boys and young seamen, which are mainly financed by the Trust but administered by the Seafarers' Education Service, and 12 scholarships were awarded. These scholarships take the form of a four-year correspondence course together with the necessary text books, and it is estimated that about one in ten who rise from deck status are now scholars under this scheme.

Training Ship Prizes

Prizes, to a total value of £30, offered to the training ships *Indefatigable*, *Arethusa* and *Mercury* for the boy in each ship who, in the opinion of his officers, would make the best sailor, were awarded to Albert Edward Andrews of *Indefatigable* (£10), John Ogilvie Emby and Michael Charles Bloodworth of *Arethusa* (£5 each), and Andrew Norman Lind Simpson of *Mercury* (£10). The silver medal offered as a navigation prize in the South African Nautical College *General Botha* was awarded to Herbert Michael Curtis.

Extra Master's Certificate Examination

The Silver Medal offered to the candidate who obtained the highest marks in the Ministry of Transport's Examination for the Extra Master's Certificate in 1956 has been awarded to Mr. G. P. Horscroft.

Thomas Gray Memorial Bursaries Scheme

Three bursaries were awarded under the Thomas Gray Memorial Bursaries Scheme to cadets of the School of Navigation, Southampton, H.M.S. *Conway* and H.M.S. *Worcester* respectively. The scheme, which is now in its fourth year, gives help to cadets in financial difficulties who without it might be compelled to abandon their training.

Deed of Professional Merit

Six submissions were received in connection with the offer of an award of the Society's silver medal for a deed of outstanding professional merit performed

by a member of the British Mercantile Marine between October, 1955, and September, 1956, and on the unanimous recommendation of the Judges the award was made to Mr. Alexander Wood, Skipper of the M.F.V. *Briar Bank*, for the skill which he had displayed in a rescue operation in Buckie Harbour.

XI. ENDOWED PRIZES

Offers of prizes were made this year under the Howard and Fothergill Trusts. A prize of £50 was awarded under the Howard Trust to Mr. A. Enticknap for his essay on 'Gas turbines and their application to road transport'; and a prize of £10 under the Fothergill Trust to Mr. S. Harrison, Chief Fire Officer of the Kuwait Oil Co., for his suggestion for a new method of controlling and extinguishing fires in oil storage tanks. Full details of the results were published on page 885 of the *Journal* for 12th October, 1957.

XII. CONFERENCE ON 'PERILS AND PROSPECTS IN TOWN AND COUNTRY'

The Council's continuing concern for the threat to the amenities of town and countryside in this country was reflected in a one-day conference held at the Society's House on 31st October, 1956. In part a sequel to the two papers on 'Beauty in Danger' read to the Society in the previous session, the conference was intended to increase public concern as to the dangers; to draw attention to the work of the voluntary societies already dealing with particular aspects of the problem; to emphasize the part which the individual can play, and to consider points at which additional safeguards might be needed.

The Conference was opened by the Right Honble. Duncan Sandys, M.P., the Minister of Housing and Local Government; and The Earl of Euston, the late Sir Patrick Abercrombie, Lady Brunner and Sir Stephen Tallents took the chair at various stages of the proceedings. The speakers included Dr. W. G. Hoskins, Sir Hugh Casson, Mr. G. A. Jellicoe, Mr. W. H. Giffard, Sir Geoffrey Hutchinson, Mr. S. A. Sadler Foster, Mr. John Betjeman and Mr. Henry Morris.

A full report of the proceedings was published in the *Journal* for 21st December, 1956.

XIII. SCIENCE AND INDUSTRY COMMITTEE

The Science and Industry Committee, which was initiated by the British Association and since 1954 has been sponsored jointly by the Society, the British Association and the Nuffield Foundation, has now published its Report on the possibility of speeding up the application to industry of the results of scientific research, in the form of a book entitled *Industry and Technical Progress*, by Professors C. F. Carter and B. R. Williams.

The Council has also approved plans for holding a Conference on 27th June, to discuss some of the implications of the Report.

XIV. COMMONWEALTH SECTION COMMITTEE

A list of the papers and lectures arranged by the Commonwealth Section Committee during the Session will be found in Section XXVIII of this Report.

The Council has asked the Committee to undertake responsibility for arranging, from time to time, in the Society's House, exhibitions illustrating development and progress in the Commonwealth, and for promoting exhibitions of British material for display in Commonwealth countries. The Committee has appointed a sub-committee for this purpose.

XV. SPECIAL ACTIVITIES COMMITTEE

The Special Activities Committee gave consideration during the year to a number of matters on which it was felt that the Society might possibly take action. One of the major results was the conference on 'Perils and Prospects in Town and Country', referred to in Section XI. The Committee also discussed with officials of the Ministry of Transport a number of points concerned with street and road signs. A notice published on page 651 of the *Journal* for 20th July, 1956, gave details of these discussions, and invited criticism from Fellows of the siting and lettering of sign posts. As a result of this invitation some further points were submitted to the Ministry, who made observations on them, and it was agreed that the matter should be further considered in the autumn of 1957. Some comments on street lettering were also submitted to the Ministry by the Faculty of Royal Designers for Industry.

Among other subjects considered were caravan sites, apprenticeship schemes in industry, and the writing of text books.

XVI. THE LIBRARY

During the past year the Library has benefited from a number of gifts, a considerable proportion of which have come from other libraries through the British National Book Centre.

Work on the loose archives of the Society is continuing and the collection has been enlarged by the purchase of 65 items relating to a proposed annuity for James Barry. This addition was described in the *Journal* for 7th December, 1956. An undated letter from Barry to Joseph Bonomi has also been acquired.

The total of loans of books from the Library showed a small increase over the previous year's total. This is the first time an increase has been recorded since 1952, and the Council hope that this may be taken as a sign that Fellows are able to make more use of the services which the Library offers them. Fellows are reminded that these include the right to borrow books in person or by post, and that under certain conditions books on any subject can be obtained for them through the National Central Library. The Library staff also endeavour to assist Fellows in obtaining bibliographical information.

XVII. THE SOCIETY'S CHRISTMAS CARD

The subject of the 1956 Christmas card was chosen to commemorate the 250th anniversary of the birth of Benjamin Franklin and the 200th anniversary of his election to membership of the Society, both of which occurred during the year. It was a picture, specially painted by Miss Anna Zinkeisen, R.O.I., R.D.I., which showed Franklin attending a meeting of the Committee of 'Polite Arts', where successful candidates in the Society's annual competition were interviewed in connection with their awards.

This was the eighth Christmas card produced by the Society for its Fellows, and 25,000 were sold.

XVIII FELLOWSHIP

The Society's membership has remained fairly steady throughout the year, and the figure after the June Council meeting was 6,207 as compared with 6,228 at the corresponding time last year. Considering many circumstances this position may be regarded as not unsatisfactory; but the progressive policy which the Council has been following during recent years depends for its full implementation upon a membership which is not merely stable but is actually increasing. They are confident that the increased activities and amenities for which the newly-acquired premises will provide will conduce to this end, but they trust that Fellows will support them in this by continuing to put forward the names of suitable candidates for election.

XIX. OBITUARY

During the past year the Society recorded with deep regret the death of a number of Fellows, among them being Dame Caroline Haslett, the first lady Member of the Council, and Sir John Simonsen, who had been a Member of Council since 1949; also of Sir Frank Brangwyn, who received the Society's Albert Medal in 1932.

Other obituary notices which appeared in the *Journal* included those of Freeman Wills Crofts, the novelist; Sir James Donald; Lord Dulverton; Robert Y. Eaton (of Toronto); R. B. Fishenden, the editor of *The Penrose Annual*; Lt.-Gen. Sir Otto Lund, Commissioner-in-Chief of the St. John Ambulance Brigade; C. K. Ogden, the inventor of Basic English; Sir William Paterson, inventor of the Anderson shelter; Lord Perry; H. N. Ridley (a centenarian and a Fellow from 1899); Sir Francis Simon; Sir Thomas Southorn, formerly Governor and Commander-in-Chief of the Gambia; Harold Speed; H. L. Van Doren (U.S.A.); Percy A. Wells and R. F. Wilson.

XX. NEW COUNCIL

The vacancy created by the death of Sir John Simonsen was filled by the election of Mr. A. R. N. Roberts.

The Bye-laws require that four Ordinary Members of the retiring Council shall not stand for re-election, and the following Members of the 1956-57

Council are not included in the list drawn up by the retiring Council: Lord Cohen of Birkenhead; Professor Sir Charles Dodds; Mr. F. A. Mercer; and Mr. John Gloag. It is recommended that their places should be filled by The Honble. G. C. H. Chubb; Mr. Edgar E. Lawley; Sir Herman Lebus and Mr. Hugh A. Warren.

The designation of Sir Alfred Bossom to be Chairman of the new Council entitles him to be elected as a Vice-President, and the Council recommend that his place as Treasurer be taken by Mr. F. A. Mercer.

Professor R. D. Russell stands for election as *ex-officio* Vice-President on succeeding Mr. Milner Gray as Master of the Faculty of Royal Designers for Industry.

Subject to the passing of an amendment to the bye-laws which will be recommended to the Society at the Annual General Meeting, the Council also propose the election as a Vice-President of Colonel Walter J. Brown, the Society's senior Honorary Corresponding Member in Canada.

XXI. HONORARY CORRESPONDING MEMBERS IN INDIA AND PAKISTAN

Continuing its policy of fostering an interest in the Society's work in the British Commonwealth, the Council have appointed Mr. R. M. Methven, M.S.E., as Honorary Corresponding Member for East Pakistan, and Mr. A. M. Maddox, M.B.E., M.A., as successor to Mr. William Mitchell for the Calcutta-Cawnpore area of India. Details of the appointments were published on page 3 of the *Journal* for 23rd November, 1956.

XXII. STANDING COMMITTEES

Lists of those appointed to serve on the various Standing Committees of the Society, and of the Society's representatives on the governing bodies and committees of certain other organizations, were published in the *Journal* on 23rd November and 7th December, 1956.

XXIII. STAFF

Mr. R. V. C. Cleveland-Stevens left the Society's service at Easter, and was succeeded as Deputy Secretary by Mr. G. E. Mercer. The Assistant Secretaryship also became vacant in June, following the resignation of Mr. David Lea, who has been succeeded by Mr. J. S. Skidmore.

XXIV. FINANCE

The surplus of income over expenditure this year amounts to £2,917, a reduction of nearly £1,000 from last year's figure as was anticipated in the last Annual Report. In an age subject to frequent and heavy financial stresses, the Council consider it desirable to maintain a substantial margin in the annual Income and Expenditure Account. The Society's reserves are comparatively

modest and in view of inflation are constantly shrinking in their real value. Some small annual addition to them is therefore of increasing importance, and in view of these various circumstances, as well as to remove what they felt was an increasing anomaly, the Council decided to ask the Society at a Special General Meeting to amend Bye-law 50 to make the annual subscription the same for all Fellows.

XXV. INCREASE IN SUBSCRIPTIONS

A Special General Meeting of the Society, held on 12th February, 1957, voted an amendment of Bye-Laws 50 and 51, raising the annual subscription payable by all Fellows as from Ladyday last to Four Guineas, and the life composition fee from Thirty Guineas to Forty Guineas.

A report of the proceedings was published in the *Journal* for 1st March, 1957.

XXVI. LOCAL RATES

After careful consideration of the Society's position regarding Local Rates both under Section 8 of the Rating and Valuation (Miscellaneous Provisions) Act, 1955, and the Scientific Societies Act of 1843, the Council decided to lodge a proposal for the exemption of the Society from liability for such Rates under the latter Act. An objection was, however, lodged by the Local Valuation Officer, and after obtaining further information and advice the Council decided to withdraw the proposal without prejudice.

The Society has, however, received the benefit of the partial *moratorium* granted to certain types of institutions by Section 8 of the 1955 Act, but having recently been notified by the Westminster City Council that it is their intention to terminate this concession, the Council have decided to enquire further into the whole matter and have appointed a special committee for that purpose.

XXVII. FILM EVENINGS

The Film Evenings, of which there were again four during the Session, continued to attract large audiences of Fellows and their guests. In most cases, as in previous years, the producers or directors of the films screened were present to introduce their work.

Among the films shown were *The New Explorers*, *Point of New Departure*, *Coral Wonderland*, *Distant Neighbours* and *Shaped by Danish Hands*.

XXVIII. PAPERS AND LECTURES

Once again the Society's programme of lectures and papers, both those of a general nature delivered at its Ordinary Meetings and in the form of Cantor Lectures, and those arranged by the Commonwealth Section Committee, have been characterized by the authority and distinction of the lecturers, and

also by the range of subjects covered, the width of which is, of course, one of the special characteristics of the Royal Society of Arts.

The full list of papers and lectures given during the last Session is as follows (the numbers in brackets refer to *Journal* pages; where the paper or lecture has not yet been published, the date of its delivery is given):

A. ORDINARY MEETINGS

Chairman's Inaugural Address

WHITHER DESIGN? A LAYMAN'S VIEW. *Dr. R. W. Holland* (page 5)

Trueman Wood Lecture

SCIENCE IN ARCHÆOLOGY. *Sir Mortimer Wheeler* (15th May)

Peter Le Neve Foster Lecture

THE LIFE AND WORK OF W. R. LETHABY. *A. R. N. Roberts* (page 355)

Alfred Bossom Lecture

AIR CONDITIONING OF BUILDINGS. *J. S. Hales* (page 282)

Cadman Memorial Lecture

MINING EDUCATION AND TRAINING. *Professor I. C. F. Statham* (page 409)

Fernhurst Lecture

TRACE ELEMENTS IN PLANT NUTRITION: WITH SPECIAL REFERENCE TO CROPS.
Professor T. Wallace (page 515)

Fred Cook Memorial Lecture

PORTUGUESE PAINTERS OF THE FIFTEENTH AND SIXTEENTH CENTURIES.
C. de Azevedo (22nd May)

Papers

Special Meeting

(Presentation of an R.D.I. Diploma and the Bicentenary Medal.)

Oration

THE DESIGNER'S STATUS IN INDUSTRY. *Sir Gordon Russell* (page 151)

Ordinary Meetings

THE COMMISSIONING OF WORKS OF ART. *Louis Osman* (page 43)

QUACKS THROUGH THE AGES. *A. Dickson Wright* (page 161)

HOME SAFETY. *Major-General B. K. Young* (page 207)

Symposium of two papers on SCIENCE IN KITCHEN PLANNING

THE PRINCIPLES OF PLANNING. *Mrs. M. Wheatcroft* (page 187)

THE KITCHEN OF TO-DAY AND TO-MORROW. *Miss J. E. Walley* (page 196)

CHILDREN AND FILMS. *Miss M. Field* (page 332)

THE CARAVAN AND ITS IMPACT ON SOCIETY. *W. M. Whiteman* (page 393)

- MODERN DETERGENTS. *F. Courtney Harwood* (page 467)
 SYNTHETIC DETERGENTS—A NEW POLLUTION PROBLEM. *Dr. B. A. Southgate*
 (page 485)
 THE DEVELOPMENT AND USE OF GLASS FIBRES. *A. Hudson Davies* (page 437)
 THE AIR TRAINING CORPS—ITS HISTORY AND PLACE IN CONTEMPORARY
 SOCIETY. *Wing-Commander Norman Macmillan* (page 575)
 PLUMBING. *G. L. Ackers* (20th March)
 LONDON AIRPORT. *Sir Alfred Le Maitre* (page 703)
 SPHERICAL PERSPECTIVE. *Brigadier J. L. P. Macnair* (3rd April)
 SOME PROBLEMS OF BACKWARD ADULTS. *Lieut.-Colonel E. C. Gould* (10th April)
 A NEW GRAMMAR OF ORNAMENT. *Sergei Kadleigh* (8th May)
 THE ENGLISH BALLET. *Dame Ninette de Valois* (29th May)

B. COMMONWEALTH SECTION

Sir George Birdwood Memorial Lecture

ROMANCE AND POETRY IN INDIAN PAINTING. *W. G. Archer* (6th June)

Thomas Holland Memorial Lecture

THE IMPERIAL INSTITUTE. *K. G. Bradley* (28th May)

Papers

- CHEMISTRY AND THE SUGAR CANE. *Professor L. Wiggins* (page 31)
 LONDON HOUSE. *Brigadier E. C. Pepper* (page 125)
 TECHNICAL EDUCATION IN NIGERIA. *Dr. J. E. Richardson* (page 311)
 THE EMERGENCE OF AFRIKAANS AS A LITERARY LANGUAGE. *R. Macnab* (page 372)
 HOUSING AND BUILDING IN THE COMMONWEALTH. *G. A. Atkinson* (page 535)
 ART IN AUSTRALIA: LOOKING BOTH WAYS. *D. J. Finley* (page 610)
 THE WEST INDIAN FEDERATION. *Sir Hilary Blood* (28th March)
 THE BRITISH COUNCIL AND THE COMMONWEALTH. *R. Seymour* (16th April)
 THE ST. LAWRENCE RIVER POWER PROJECT. *Dr. Otto Holden* (page 563)

C. CANTOR LECTURES

The following courses were delivered during last Session:

- ENGINEERING ELECTRONICS. (Three lectures.) *Dr. L. E. C. Hughes* (page 228)
 THE CONTRIBUTION OF LIGHTING TO MODERN LIFE:
 LIGHTING IN OUTDOOR LIFE AND WORK. *J. M. Waldram* (page 633)
 LIGHTING IN COMMERCE AND INDUSTRY. *C. Dykes Brown* (page 647)
 LIGHTING IN DECORATION AND ARCHITECTURE. *D. W. Durrant* (page 661)

D. DR. MANN JUVENILE LECTURES

Two Juvenile Lectures were given during the Christmas holidays as follows:

- FROM COCOA BEAN TO CHOCOLATE. *Dr. F. Banfield* (page 298)
 THE STORY OF PANTOMIME. *W. J. Macqueen-Pope* (page 456)

XXIX. MEDALS FOR PAPERS

The Council have awarded Silver Medals for the Session 1956-57 to the following lecturers:

For Papers read at Ordinary Meetings

G. L. Ackers. 'Plumbing'

A. Hudson Davies. 'The Development and Use of Glass Fibres'

Lieut.-Colonel E. C. Gould. 'Some Problems of Backward Adults'

Professor Norman W. Radforth. 'Peat in Canada and Britain—Economic Implications'

Dame Ninette de Valois. 'The English Ballet'

W. M. Whiteman. 'The Caravan and its Impact on Society'

For Papers read at Meetings of the Commonwealth Section

D. J. Finley. 'Art in Australia: looking both ways'

Dr. Otto Holden. 'The St. Lawrence River Power Project'

Roy Macnab. 'The Emergence of Afrikaans as a literary language'

The adoption of the Report having then been formally moved by the Chairman and formally seconded by Lord Nathan, the Chairman invited questions upon it.

There being no questions, the motion that the Annual Report should be adopted was put to the meeting and carried unanimously.

The Chairman then called on Mr. P. A. Le Neve Foster, the Senior Treasurer, to move the adoption of the Accounts for the year ending 31st December, 1956.

MR. LE NEVE FOSTER: The Financial Statements have been published in the *Journal* and you will see that they follow the same general pattern as last year. There are, however, two points to which I think I ought to direct your attention. There is a surplus of £3,000; that is a little less than last year, but it is still very substantial. The other point is the allocation of salaries. If you look at the Income and Expenditure Account you will see that certain of the Society's activities—the *Journal* for example—appear to have cost more than in the previous year. Those increases are in the main simply due to adjustments in the way in which salaries have been allocated; these adjustments do not make any difference whatever either to the total salaries paid by the Society or to the Society's surplus.

I should like formally to move the adoption of the Accounts.

Mr. D. W. V. Main having formally seconded their adoption, the motion that the Accounts be adopted was put to the meeting and carried unanimously.

THE CHAIRMAN: The question of accounts always seems to me to be a very important one in relation to the operation of a society or a company, and I think that, of the voluntary workers for the Society, the most important are the persons

who deal with its finances. You will remember that the minutes of the last meeting record the view that it is not usual to propose a formal vote of thanks to the Treasurers; but I think that is a mistake. They are the mainstay of the Society, and I believe that the Treasurers have done excellent work this year. I have very great pleasure in proposing a hearty vote of thanks to them for their services to the Society. I should like to call upon Mr. Gloag to second that.

MR. JOHN GLOAG: I have great pleasure in seconding a vote of thanks to the Treasurers for their admirable work, without which we should very shortly cease to exist.

The vote of thanks was carried unanimously.

THE CHAIRMAN: Now we come to the extensive part of our Agenda, the amendment of a number of Bye-Laws. You will have seen details of what is proposed set out on pages 599-601 of the *Journal* for 21st June, 1957.

There is first a proposal that Bye-Laws 4, 5 and 18 [page 599]* shall be altered to bring the financial administration and control into line with present day conditions. It seems a very difficult matter for a fully qualified Accountant, controlled by a Secretary and by Two Treasurers, to be limited to the payment of amounts not exceeding £5 from what is practically a petty cash account. The proposal here is that we open at the bank an account on which cheques will be drawn in the ordinary way, in order that debts of £25 or less can be paid on the signature of the Secretary and the Accountant. But no cheque will be drawn for the replenishment of this new account that has not either received the prior consent of the Council, or been afterwards confirmed by the Council. That is the substance of Bye-Laws 4 and 5.

Bye-Law 18 takes a commonsense view of the method of auditing the accounts, and provides that they shall be audited annually instead of quarterly. For many years the practice has been to audit them annually.

Is there any question anyone would like to ask on this group of amendments?

MR. D. J. AVERY: Referring to Bye-Law 5: I take this to mean that the Treasurer and Secretary will be empowered to issue a cheque from the main account and then present it to the Council as a *fait accompli* and say, 'We have issued this cheque, please confirm it'. I feel that all cheques should, as a matter of policy, be authorized before they are paid.

THE CHAIRMAN: The intention is that such payments may be made on the signature of a Treasurer and the Secretary where the Society can obtain benefits such as discount for prompt payment, and the matter comes before the Council to be confirmed. We take all advantages of the benefits of quick payment.

MR. D. W. V. MAIN: It seems to me that this amendment gives rather a lot of power to individuals. I myself should like to hear more cogent reasons before agreeing to this amendment.

* This and all page numbers given hereafter refer to the issue of the *Journal* for 21st June, 1957.

THE CHAIRMAN: There have been occasions in the past when it has been found difficult to let accounts stand over until the next meeting of Council. For example, after the 9th July, there will be no further meeting of the Council until October: the amendment is proposed in order to meet contingencies of this kind—you cannot in these days let accounts stand over for a couple of months without meeting them—and this is the Council's way of confirming what has been the practice as long as I have known it in the past twenty years. A list of cheques which are to be drawn is presented together with a list of cheques that *have* been drawn, because of the necessity for paying some accounts promptly. You can provide for the payment of rent because the amount payable is known in advance; you cannot provide for the payment of the rates because you do not know what they will amount to; you cannot provide exactly for every purchase that has been made on the strength of the Council's prior decision. The change is proposed in order to avoid such difficulties and uncertainties. You are assured of fair control when you have an elected member of the Society acting as Treasurer and the highest executive of your paid staff as the second signatory—control as strong as it would be in the average business company.

MR. MAIN: With great respect to those gentlemen, Sir, I still think that it is not desirable to give such wide powers as this; and I think the amendment should be framed in some more narrow way, to allow only certain specified payments to be made.

THE CHAIRMAN: We have three points before us: first, the opening of a subsidiary account to be operated by cheques not exceeding £25 in any one payment; secondly, the suggested Bye-Law providing that all cheques drawn on the Society's main account shall be authorized or confirmed by the Council; and thirdly, that the accounts shall be audited annually. In order that these points shall not be lost sight of I move that the Bye-Laws 4, 5 and 18 shall be altered as printed in the *Journal* for 21st June [p. 599], to bring financial administrative control into line with present day conditions.

The amendments having been formally seconded, the motion that Bye-Laws 4, 5 and 18 be amended as indicated on page 599 of the Journal for 21st June was put to the meeting and carried by 30 votes to 2.

THE CHAIRMAN: Bye Laws 14, 15 and 16 [p. 599]. These are very simple alterations. We have a Secretary, we have an Assistant Secretary, and now we have a Deputy Secretary. The Bye-Laws as they stand provide only for the functioning of a Secretary and an Assistant Secretary. The proposed alterations in Bye-Laws 14, 15 and 16 provide that there may be more than one assistant Secretary, under which category the Deputy Secretary would be included for the purposes of the Bye-Laws.

Sir Selwyn Selwyn-Clarke having formally seconded this proposal, the motion that Bye-Laws 14, 15 and 16 be amended as indicated on page 599 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Law 24. This amendment arises from the situation

created by the change from a weekly to a fortnightly *Journal*, which affects the notice required of the Annual General Meeting. Formerly the notice required was not less than seven days and not more than 14; since it may now happen that the *Journal* is published, say, 20 days before the date of the meeting, neither that nor the succeeding issue of the *Journal* could give notice of not more than 14 or less than seven days respectively. The suggestion is that the number 14 shall be altered to 21.

The motion that Bye-Law 21 be amended as indicated on page 599 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: The amendment of Bye-Law 42 [page 600] is intended to cover an already existing practice: namely, that meetings of the Society for the purpose of the reading of papers shall be held on 'Wednesdays' instead of 'Wednesday evenings'. The deletion of the word 'evening' will allow meetings to be held in the day or the evening of a Wednesday as circumstances require.

MR. AVERY: For some time past the Council has been holding the main meetings of the Society on Wednesday afternoons despite the fact that the Bye-Laws provide for evening meetings. This is doing the Society a considerable amount of harm, because this choice of time prevents a large number of Fellows from taking an active part. It is preventing them especially from attending the business meetings of the Society. This meeting, for example, is being held at a time in the afternoon when very few professional men can get here. Members are asked to introduce suitable new applicants for membership, but when one tries to do this one finds that people are reluctant to belong to a Society which has its meetings at a time when they cannot attend. Wednesday afternoons are not convenient for the majority of Fellows, and I should like to see the proposal that the word 'evening' be deleted rejected.

MISS VIOLET PAIN: May I suggest that meetings should be held at the same time as usual, since members are perfectly satisfied with the way they are being conducted. Big industrial concerns like I.C.I. have their meetings in the day time.

MR. N. P. BYFORD: I should like in general terms to support what Mr. Avery has said, with one proviso: that where a meeting is devoted to some technical subject it is probably much more convenient for the technicians employed in any particular industry to attend in the day time. The firm concerned will probably give their leading employees the necessary facilities for attending. I suggest, however, that present conditions make it impossible for a great many people who are employees and not professional men conducting their own practice to attend a meeting of general interest in the day time, and it is for those people that the holding of meetings in the evening would provide the greatest advantage. I suggest a different form of amendment which would leave it to the discretion of the organizers to decide which meetings are best held in the afternoon and which in the evening.

19TH JULY 1957

ANNUAL GENERAL MEETING

THE CHAIRMAN: I think that Fellows will agree that the present wording of the Bye-Law does by implication allow the Council to fix other times when the Council considers Wednesday evening would not be convenient. If the change were made to 'Wednesday' rather than 'Wednesday evening' it would be possible to arrange meetings at times in the afternoon or evening in appropriate cases. The present reading of this Section is 'There shall be Ordinary Meetings of the Society on every Wednesday evening during the Session, *unless otherwise directed by the Council*'.

MR. AVERY: It is a long time ago since we have had a meeting on a Wednesday evening. I agree that this proposed amendment would be useful if it meant Wednesday in the afternoon and evening, but it clearly does not. I think it means Wednesday afternoons, as has been the case for the last 12 or 13 years.

THE CHAIRMAN: The proposed amendment will allow the Council to arrange meetings in the afternoon or evening of Wednesdays, but it will not allow any other day but Wednesday to be chosen in the normal course.

A FELLOW: You are proposing to delete the words 'unless otherwise directed by the Council', then?

THE CHAIRMAN: No. It is just proposed to delete the word 'evening'.

MR. AVERY: Why have the Council not conformed to the Bye-Laws hitherto?

THE CHAIRMAN: The Papers Committee draws up the list of papers, picks its speakers, and for the most part, quite candidly, the speakers are prepared to come in the afternoon rather than in the evening. The Council have therefore exercised their prerogative, which is contained in the phrase 'unless otherwise directed by the Council'. They now ask you, having considered the matter, to delete the word 'evening' in line 2.* I propose as Chairman of the Council that that shall be done. Will anyone second that?

Mr. A. R. N. Roberts having formally seconded the alteration, the motion that Bye-Law 42 be amended as indicated on page 600 of the Journal for 21st June was put to the meeting and carried by 29 votes to 3.

THE CHAIRMAN: In lines 5 and 6 of the same Bye-Law it is proposed to delete 'or of any other special Sections'. The passage in the Bye-Law is 'Meetings of the Commonwealth Section, and all other meetings or series of meetings which the Council may from time to time arrange, shall be held at such times as may be arranged by the Council, or by the special Committees appointed by the Council to make arrangements for such Meetings'. The proposal is that, for those words 'or any other special Sections' shall be substituted 'and all other meetings or series of meetings which the Council may from time to time arrange'. It is a simplification.

* These references are to lines of the Bye-Laws as printed in the current booklet published by the Society.

THE SECRETARY: It also gives authority to the Council to do what it has done for so many years and arrange a series of Cantor Lectures, which are not, in fact, covered by the Bye-Law as it stands. This new 'umbrella' phrase would cover them.

The motion that Bye-Law 42, lines 5 and 6, be amended as indicated on page 600 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Laws 43, 45 and 46 [page 600]: the proposals here are intended to widen the scope of the bye-Laws to comprehend all 'lecture' meetings of the Society.

MR. AVERY: Why does the Council wish to remove the word 'discussed'?

THE CHAIRMAN: Because it might happen that a chairman should decide against inviting an audience to discuss the paper it had heard.

The motion that Bye-Laws 43, 45 and 46 be amended as indicated on page 600 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Law 49 [page 600]: to ensure that those entitled to the privileges of Bye-Laws 54 and 59—that is, Honorary Corresponding Members and Honorary Life Fellows—are not debarred from full membership rights by this Bye-Law.

Bye-Law 51 [page 600]: There is a misprint in the *Journal* here, in the statement of the purpose of the amendment. For 'to ensure a due element over the acceptance of life composition fees' we should read 'to ensure a due element of control' etc. This control will be assured by inserting in Line 1 'subject to the discretion of the Council'.

MR. AVERY: In Bye-Law 49, I note that Honorary Corresponding Members are not entitled to vote at meetings, ordinary or general, nor I believe are they at the moment allowed to stand for the Council. Does that also apply to Honorary Life Fellows?

THE SECRETARY: The rule here is 'that no person will be entitled to any of the privileges of Membership until he shall have paid his subscription'.

The motion that Bye-Laws 49 and 51 be amended as indicated on page 600 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Law 54 [page 600]: it is proposed to amend this Bye-Law in order to render an Honorary Corresponding Member who may become a Vice-President under the amended Bye-Law 75 fully qualified so to act. The suggestion is to delete all after 'appointed' in lines 5 and 6 and substitute 'shall enjoy all the privileges of ordinary membership'.

MR. AVERY: What do we gain by having Honorary Corresponding Members living abroad, as Vice-Presidents of the Society?

THE CHAIRMAN: It is a distinction that might be conferred on a person who is

doing good service for the Society in the country where he is living. In Canada, for instance, meetings of members of the Society have taken place through the agency of the Honorary Corresponding Member. We hope that our activities can be extended by this means both in the United States and in Canada and in other parts of the Commonwealth.

MR. AVERY: This would give a person who has no financial liability to the Society the right as a Member of Council to take part in the suspension or expulsion of a Fellow who has not paid his subscription. I would like to know whether these Honorary Corresponding Members will be invited to vote by post, or any other means at Council meetings.

THE CHAIRMAN: There would certainly be no invitation to them to vote by post.

The motion that Bye-Law 54 be amended as indicated on page 600 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Law 56 [pages 600-601]: Here the amendment will remove the implication that a resigning member who fails to pay all accrued dues remains a member of the Society. At present the Bye-Law states 'that any member desirous of withdrawing from the Society may do so by sending his resignation in writing to the Secretary, and on payment of all subscriptions and arrears due from him up to that period, he shall henceforth cease to be a Member of the Society'. This may be taken to imply that if a member does not pay his dues he yet remains a Member of the Society. It is only a matter of removing a possible ambiguity.

The motion that Bye-Law 56 be amended as indicated on pages 600-601 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Law 61A (page 601): This is an additional Bye-Law introducing a new form of disciplinary action more particularly to deal with serious abuses of the Fellows' right to the use of the letters 'F.R.S.A.' The rights of the Member are preserved by demanding that there shall be a quorum of fifteen in the Council which considers the question of his membership, and that there should be a two-thirds majority in favour of disciplinary action.

MR. AVERY: The amendment provides that a Member may be suspended if fifteen members of the Council are present and if ten of them consent thereto. Could not the amendment expressly require the consent of at least fifteen of the members present at the meeting? Also, I think fifteen members of Council is a very poor attendance for such a matter. It merits an attendance of at least twenty Members of Council.

THE CHAIRMAN: I am prepared to accept the amendment. Will anybody second the amendment as proposed, that, of those present at the meeting where such a suspension is proposed, at least fifteen shall consent thereto?

It having been proposed by the Chairman and seconded by Sir Selwyn Selwyn-Clarke that Bye-Law 61A should be amended so that the last clause read

'and provided also that at least fifteen Members of Council present at the meeting at which the suspension shall be resolved on consent thereto', *the motion was put to the meeting and carried.*

THE CHAIRMAN: I now put a suspended motion that Bye-Law 61A shall be created as suggested, with the amendment which has just been carried.

The motion was put to the meeting and carried.

THE CHAIRMAN: By-Law 64 [page 601]: The present Bye-Law states that you may remain an Associate until you are 24; but is the end or the beginning of your 25th year referred to? It is in order to clarify this that the amended Bye-Law gives the 25th birthday as the effective date.

The motion that Bye-Law 64 be amended as indicated on page 601 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: Bye-Law 75 [page 601]: The purpose is to enable Honorary Corresponding Members to become Vice-Presidents; and to bring the Bye-Law generally up to date. The main feature of the amendments is the deletion of dates which have ceased to be operative, these Bye-Laws having been originally prepared before 1955.

The motion that Bye-Law 75 be amended as indicated on page 601 of the Journal for 21st June was put to the meeting and carried.

THE CHAIRMAN: I now propose a renumbering of the Bye-Laws from No. 61 onwards, so that they follow in numerical order: the new No. 61A becomes No. 62, No. 62 becomes No. 63, and so on.

The motion was put to the meeting and carried.

The list of nominations having been exhibited in the Library in accordance with the Bye-Laws, and no additional nominations having been made, the Chairman called on the Secretary to announce the New Council for 1957-1958, the list of which is as follows (names in italics are of Fellows who have not served on the previous Council in the capacity indicated):

PRESIDENT

His Royal Highness The Prince Philip, Duke of Edinburgh, K.G.

VICE-PRESIDENTS

Sir Alfred Bosson, Bart., LL.D., F.R.I.B.A., J.P., M.P. (Chairman-designate).

Sir Edward Crowe, K.C.M.G.

Sir Ernest Goodale, C.B.E., M.C.

Robert W. Holland, O.B.E., M.A., M.Sc., LL.D.

Sir Harry Lindsay, K.C.I.E., C.B.E.

The Earl of Radnor, K.C.V.O.

E. Munro Runtz, F.R.I.C.S.

Colonel Walter J. Brown, V.D., LL.D., J.P. (Hon. Corresponding Member for Canada).

Professor R. D. Russell (Master, Faculty of R.D.I.).

ORDINARY MEMBERS OF COUNCIL

W. Greenhouse Allt, D.Mus., F.R.C.O., F.T.C.L.	Sir William Ogg, M.A., Ph.D., LL.D. A. R. N. Roberts.
Mrs. Mary Adams, O.B.E., M.Sc. <i>The Honble. G. C. H. Chubb.</i>	Sir Harold Saunders, F.C.C.I., B.Sc.(Eng.).
Robin Darwin, C.B.E., Hon.A.R.C.A.	Sir Selwyn Selwyn-Clarke, K.B.E., C.M.G., M.C., M.D., F.R.C.P.
Sir William Halcrow, M.I.C.E., M.I.Mech.E.	Professor L. Dudley Stamp, C.B.E. D.Lit., D.Sc.
The Earl of Halsbury, F.R.I.C., F.Inst.P.	Sir Stephen Tallents, K.C.M.G., C.B., C.B.E.
A. C. Hartley, C.B.E., B.Sc., F.C.G.I., M.I.C.E., M.I.Mech.E.	G. E. Tonge.
William Johnstone, O.B.E., D.A. <i>Edgar E. Lawley.</i>	Barnes Neville Wallis, C.B.E., D.Sc., R.D.I., F.R.S.
Lord Latham, J.P. <i>Sir Herman Lebus, C.B.E., J.P.</i>	<i>Hugh A. Warren, M.Sc.</i>
Oswald P. Milne, J.P., F.R.I.B.A.	Sir Griffith Williams, K.B.E., C.B.
Lord Nathan, P.C., T.D., D.L., J.P., F.S.A.	Miss Anna Zinkeisen, R.O.I., R.D.I.

TREASURERS

P. A. Le Neve Foster.
F. A. Mercer, Hon.F.S.I.A.

THE CHAIRMAN: One of the happy privileges of a Chairman at an Annual General Meeting is to offer his personal thanks and gratitude for the general assistance that he has had from the staff of the Society. It is generally understood that members of staff do their duty, and that they are paid for it; but we have the happy privilege of having a staff that does not count the cost in any way if something has to be done. I have spent a happy two years as Chairman of this Society with the feeling that whatever I asked for within the bounds of the Society's interest would be forthcoming. No Society could have a happier, more energetic or more satisfactory staff than we have. I think it would be invidious to make too many distinctions, but we are sorry to lose members of our staff and I should have liked both our departed Deputy Secretary and Assistant Secretary to hear me, before Fellows of the Society, thank them for their services.

At the same time we have already had experience of two newcomers who have shown themselves able to fall in with the routine and the happy tradition of the staff of this Society, and I should like to convey through you, Mr. Secretary, the thanks of this company to members of the staff in all ranks. The Examinations Department staff have moved from Victoria Street into our premises next door, and they are now firmly established there. We should say 'thank you' to Mr. Wheeler and his team for the work they have done for us, and I ask you to show your appreciation in the usual way.

It appears by implication that I was making the position of the Secretary very difficult. He is not a member of the staff and he ought to have a special mention for himself. I have appreciated his help, particularly during the time when

I was not able to be fully active. What I said did include him, and I hope he won't think that we started with the Deputy Secretary!

THE SECRETARY: Mr. Chairman, I am proud to be a member of the staff, and it is my privilege now to speak for all the staff and to thank you for what you have so kindly said. Speaking strictly, just for a moment, however, as Secretary rather than as a member of staff, may I say how very right you are about all my colleagues. We do find a real joy in our work here. As you have been speaking I have realized as never before that one reason for the spirit of the staff is that it is our privilege to work for and to work with honorary officers, whose activity is motivated simply by public spirit and their desire to serve. That must affect the attitude of those of us whose daily work it is to serve the Society. There is one thing I should like to say with regard to the events of the year. You have referred, Sir, to the heavy burden which the removal of the Examinations Department has imposed on them, but I am glad to say that they are finding a great joy in the completion of that removal: not merely in the fact that the work has been done, but also in being where they are now, first because of the greater pleasantness of the offices in which they are but above all because they are back under the same roof as the Society.

MR. E. MUNRO RUNTZ: It is my privilege and pleasure to propose a vote of thanks to our Chairman this afternoon, not only for presiding so efficiently to-day, but for the wonderful work he has done during the past two years. He has been indefatigable. He has had illness to contend with and overcome, and he has also had to lead the Society through that very difficult time when we had an opportunity to lease the adjoining premises. He has been successful. A retiring chairman probably suffers a little from nostalgia, but he may derive a small measure of satisfaction in wondering how his successor will fare. I have, however, no doubt about Dr. Holland's successor, for he knows his way about the world. Now I ask you to join with me in proposing a sincere vote of thanks to Dr. Holland, and I ask you do so with acclamation.

SIR EDWARD CROWE: I should like to second that proposal. Our Chairman has displayed the impartiality of a judge, the tact of a most skilful diplomat, the patience of Job and the sense of balance of a tight-rope walker!

The vote of thanks was carried with acclamation.

THE CHAIRMAN: I am very grateful to you, and to Mr. Runtz and to Sir Edward for the kind words that they have said about my period of office. Do not make any mistake about it, I have had a great kick out of it.

LONDON AIRPORT

A paper by

SIR ALFRED LE MAITRE, K.B.E., C.B., M.C.,

*Controller of Ground Services, Ministry of Transport,
and Civil Aviation, read to the Society at*

2.30 p.m. on Wednesday, 27th March, 1957, with

Air Marshal Sir John D'Albiac, K.C.V.O., K.B.E.,

C.B., D.S.O., lately Commandant, London Airport,

in the Chair

THE CHAIRMAN: I much appreciate the very graceful compliment paid to me by the Royal Society of Arts in asking me to preside this afternoon. As the late Commandant, any talk about London Airport is very close to my heart, and I cannot imagine anybody better qualified than Sir Alfred Le Maitre to outline the story of the airport. As Controller of Ground Services at the Ministry of Transport and Civil Aviation he has held the responsibility of the major part of the planning and development of our great airport.

The following paper, which was illustrated by lantern slides and films, was then read:

THE PAPER

Things happened rather slowly at London Airport in the old days. The Thames began it by forsaking its bed about 15,000 years ago and leaving us the fine, flat, gravelly stretch known as the Taplow Terrace. Two hundred and fifty years before the Romans came, unknown men built a fort, temple or palace, which still sleeps under No. 1 Runway. But Rome herself was our next real contributor. She gave us our southern boundary by driving a highway via Staines to Silchester, the Roman Clapham Junction, where you could change for Winchester, Salisbury and Bath. The Bath Road, as we know our northern boundary, is quite a modern thing and ante-dates the airport by a bare 800 years. Next came some regal goings-on on our western boundary. King Henry VII 'for the conveniency of his hawking', and to serve the Abbess of Syon's Corn Mill, tapped the Colne and invented what we now call the Duke of Northumberland's river, which supplied the lake in Syon Park. Charles I rather more than a hundred years later, 'for the better accommodation of Hampton Court Palace and the recreation and disport of His Majesty', followed suit with the Longford River which now feeds the fountains and lakes of the Palace. Both these rivers flowed placidly for three or four hundred years, one right across, and the other very near to, the area destined to be No. 5 Runway, so we built them nice straight concrete beds, one as ever three feet higher than the other, until, out of harm's way, they rejoin their ancient courses.

For practical purposes our site then reverted to half-starved sheep, villainous ale-houses and flourishing highwaymen; the last relieved travellers of all their

money and sometimes their lives, and generally showed themselves more efficient operators than the Minister of Transport and Civil Aviation, satisfied as he is with a modest 5s. a head.

One more bit of the pre-aviation story. In 1784, General Roy, fired with the idea of accurately measuring the distance between the observatories at Greenwich and Paris, laid down the first baseline for the Trigonometrical Survey of Great Britain from a point on Hounslow Heath. The cannon which marked the spot has gone elsewhere, but the Ordnance Survey as we know it was born at a spot midway along the Taxitrack serving No. 1 Runway.

To our site, by then a peaceful area of market gardens, gravel pits and well-conducted pubs, came Mr. Richard Fairey, in 1929, and from his 'Great West Aerodrome', for the next 15 years, many of the most famous aircraft in our history made their experimental flights. Sir Richard has gone his gallant way, but to him, I think, goes the credit for first spotting the value of this site.

In 1942 the Air Ministry decided that a large airfield was necessary within easy reach of London for the accommodation of very heavy bomber and transport aircraft. The chance of cashing in after the War cannot have escaped the Director-General of Civil Aviation, but Heathrow was born a true war baby. The Air Ministry was confronted with a choice of sites. Heston, the pre-war favourite, was 'out' because no power on earth could give it a runway longer than 6,000 feet in any direction. Some fifty starters were ultimately narrowed down to five; Heathrow, Gatwick, Lullingstone, Fairlop and Hatfield. Finally Heathrow was chosen, and work started in 1944 on a military airfield of the first order of magnitude, consisting essentially of three great runways on the classic triangular pattern.

The War ended more quickly than anyone had expected, and it suddenly became necessary to plan the final development of Heathrow as a civil and not a military airport. A layout panel was appointed, consisting of a dozen experts within and without the Ministry, and they performed a really remarkable feat. They had no precedents, because six years of war had made every single preconception about civil airports obsolete; they had to crystal-gaze without crystals; and they had but the most rudimentary idea of what the future civil transport aircraft was going to require. Yet they managed to strike a balance between the ideas of 1939 and those of contemporary science fiction and make a workmanlike plan for a runway system which would cater for any aircraft in the air or on the drawing board. It has done so without difficulty up to date and, as far as we can see, will go on doing so indefinitely. They planned an aerodrome fit to handle about 9 million passengers a year, and to-day it looks as though their plan will stretch to as many as 10 or 11 million.

The panel considered many runway combinations, but always subject to a general directive to make as much use as possible of the three runways already under construction by the Air Ministry. The principles they worked upon can be summarized as follows: the runway pattern must be capable of providing enough runway directions to enable any type of aircraft to land or to take off in any possible wind direction, allowing for a cross-wind component of 12 miles

an hour. To allow for simultaneous landings and take offs each runway must be doubled and each pair of runways must be separated by at least 1,500 yards.

All this added up to the famous pattern which we call the Shield of David.

Actually, we planned three more runways north of the Bath Road, anticipating the South Wales Radial Road, so that in any wind direction we could have three parallel runways in action; but before this development began we found that, by using improved methods of Air Traffic Control and better equipment, we could do without the extra triangle without loss of capacity, so the northern triangle was cancelled, the safeguarding plans revised, the village of Sipson reprieved and a great many people, including the Chancellor of the Exchequer, made happy.

Now the Shield layout, logical, aesthetically satisfying and economical in taxiing distance, did impose on us a closed terminal area, and this gave rise to some formidable problems—not all solved to-day. The first problem was access. There is only one possible way into the centre of a closed triangle, and that is the way of an earthworm. So we built a tunnel close on half a mile long, with two separate twenty-foot one-way carriage roads and two subsidiary tracks for bicycles and legs. This tunnel has handled all the traffic that it has been asked to handle—up to 2,000 vehicles an hour, and we expect it to do all we want at least until after 1970.

But access was not the only problem. The Shield dictated an inner diamond-shaped central area, for which we could only spare some 65 acres, little enough, as we are now finding, for handling the traffic of a great international airport. The runway layout limited the apron space to the four sides of the diamond, and the first problem was to arrange the stances for aircraft on these aprons, so as to give the best access from the terminal building. The second was to find the best taxiing plan, so as to reduce to a minimum the time and distance between landing and 'chocks on', and between 'chocks away' and take off.

For the moment let us leave these problems with the backroom boys and get back to history. After a hold-up during 1944 caused by flying bombs and other tokens of esteem from the Continent, the first runway, a temporary control tower with some rather rudimentary ground aids and electronics, and some even more rudimentary ex-R.A.F. buildings, were made ready for the opening flight, and on a misty winter morning, New Year's Day 1946, a B.S.A.A. *Lancastrian*, carrying five passengers and piloted by the redoubtable Don Bennett, took off from London Airport (no longer Heathrow) on a proving flight to Buenos Aires.

By March of that year B.S.A.A. were carrying out two services a week to South America, and by May B.O.A.C. operated their first service from London Airport instead of Hurn. On 31st May, when the aerodrome was formally opened, one *Lancastrian* flew in from Sydney, another left for Sydney and a *York* left for Cairo. An hour later out of heavy low cloud and into a drenching May morning there arrived from New York the Pan American *London Clipper* and the American Overseas *Flagship London*, and out of these stepped the American Wightman Cup team, who managed to pick their way over a sea of mud into the Customs tent, which a contemporary record assured us 'did not

leak to any considerable extent'. Altogether quite a man-sized day for an infant airport.

Thereafter the various international airlines moved quickly over to London Airport, including K.L.M., who had been at Croydon for 27 years, or just about seventy per cent of the whole life of powered flight up to that date. In January, 1947, Sir John D'Albiac, the first Commandant, took over the growing child from its wet nurse Mr. Roger Pugh who, for the next eight years, filled the post of Manager, and London Airport began to take shape.

The two main characteristics of London Airport in its early days were mud and tents, which tended to coalesce, but never managed to hold up business. A programme of temporary buildings was started and managed just, but only just, to keep a jump ahead of the rising traffic. London Airport from the very first was a good 'doer'. In 1947, its first full year, just over 280,000 passengers passed through it. 1956, the tenth year of its age, saw 3 million, and in that year the month of August alone hit a mark of 400,000. I might add that, in addition, the R.S.P.C.A.'s Air Hostel looks after something over half a million animals, and tries to ensure their well-being on arrival or in transit.

In the meantime all six runways and their associated taxiways were built, together with the small and slightly subtopian town now known as London Airport North, which still serves the longhaul carriers. Between 1947 and 1950 eight war-time hangars were transported to London Airport from places as far distant as Cornwall and Inverness.

Meanwhile, Pan American came into the market for hangar space. Their hangar stands on the southern edge of the airport almost on the Staines Road, and an earth mound shields the passing motorists from being blown off the road by the blast from a *Stratocruiser's* propellers.

Both B.O.A.C. and B.E.A. during these years were maturing plans for permanent bases, but in the meantime something had to be done to accommodate the new aircraft that were likely to arrive before these were ready. So we built a three-bay hangar of aluminium alloy, consisting essentially of a series of portal frames hinged at the base, assembled on the ground with their purlins, rafters and bracing, hauled into position by winches and bolted at the apex. The alloy hangar, as we call it, was finished just in time to be the home of the *Comet* fleet.

Now for the two big bases. B.O.A.C., at the time our main customer, had long been anxious to centralize maintenance; most of their aircraft had been accommodated in the temporary hangars, but their *Constellation* and *Stratocruiser* fleet was maintained rather remotely in a great series of 'Brabazon' hangars at Filton, the home of the Bristol Aircraft Company. At the same time Bristol badly wanted the space for the assembly of what we now know as the *Britannia*. So a great base was planned, on a most interesting cantilever design. Work started in the autumn of 1950 and, in the course of building, the project was further enlarged to house the complete B.O.A.C. headquarters, operations, engineering and administration.

Each of the four hangar bays has an unobstructed entrance of over 300 feet wide, or about the length of the nave of York Minster. The openings lie between



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The crew lounge at London Airport

66-foot pylons carrying a load of 4,000 tons, and from these pylons are cantilevered reinforced concrete beams counter-balanced by blocks of concrete weighing 1,000 tons. Each pen can accommodate three of the largest aircraft flying. B.O.A.C. are also engaged on another new hangar between their main base and the road, also of cantilever construction and even more exciting than their headquarter building.

B.E.A. had hitherto operated from Northolt, but when the Corporation laid down their post-war programme, they decided to operate their new *Elizabethans* and *Viscounts* from London, whither in due course all their services would migrate.

The B.E.A. planned two ranges of five hangar bays, each with 150-foot openings with no partitions, giving a clear internal length of 900 feet by 110. Including the annexes and stores the total floor area of the bays is about 450,000 square feet. Its chief interest lies in the use of very thin pre-stressed concrete members for the main roof span and the lintels of the doors. About another half million square feet is on the way.

We left the back room boys busy on the requirements of the Central Area against the time when its buildings should be completed and the transfer from the Bath Road should take place. The solution was what is now known as the

double peripheral plan; each apron was treated as a unit with one rank of aircraft-stands along the building face and another on the outer edge of the apron. A central taxiway fed both the inner and outer stands. Aircraft on inner stands would deposit their passengers alongside a ramp leading into the building, while passengers on the outer stands would reach the building in buses through a tunnel under the apron. Thus the apron was kept clear of all unnecessary vehicles and of all walking passengers.

Taxiways led from the runways to the aprons, and all aircraft traffic on the aprons was to be one way. In fact, we found that at certain times of the day we could allow aircraft to taxi from the apron in whichever direction suited them best, though when business is brisk we revert to one-way traffic.

As can be seen from the plan, the taxiing pattern imposed by the interlocking system of runways is a complicated one and much thought had to be given to the best way of guiding aircraft on the $11\frac{1}{2}$ miles of taxi-track between terminal area and runway. Finally, we divided the whole of the runway and taxiway system into blocks in such a way that all intersections could be guarded by red stop bars which could hold an aircraft until its course was clear.

The routes to be followed by aircraft are indicated by simple but effective light indicators, and the dividing lines between blocks are identified by numbers which enable pilots to fix their position and give them positive indication of points referred to by ground-movement control in the process of bringing them alongside. At night the route in use is lit by a green centre light system and the pilot is told simply to 'ride the greens'. Up in the glass button at the top of the control tower the controller can set up as many routes as he needs by pressing the appropriate members of a perfect array of buttons. It all sounds a little complicated but it works, and the mechanism is secured by a simple but important safety device whereby only one route can cross any one junction, even though three separate runways may be in use simultaneously, two perhaps for landing and one for take-offs.

Our first idea for building within the diamond was to erect temporary buildings, but when we came to consider the matter in the cold light of reason, we reached the conclusion that there was really no such thing as a temporary building. Anything that would do the trick was there for keeps, and we would not even gain significantly in cost, since once we built in more than one storey we should have to use materials that were in effect permanent. Further, we knew that anything 'temporary' was an invitation to create alongside it a built-in slum. Moreover, since temporary buildings always spread over a great deal of ground we should always be faced in the limited area of the diamond with the problem of how to find room when the time came, if it ever did, to build the permanent buildings. So we decided to start off with three permanent buildings which should incorporate all our most advanced thinking and which we knew could perform their function not only effectively, but also in a manner worthy of the job we were attempting. Mr. Frederick Gibberd was chosen by a small panel as the architect, and for a considerable time we planned and argued what could be done, what was the economic solution to this and that problem and how best



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*Inside the control tower at London Airport,
showing radar and other electronic equipment*

to time the job. In doing this, of course, we brought the British Air Corporations into our counsels, and very co-operative they were.

The first stage of the permanent building plan embraced three buildings, the Control Tower in the middle of the diamond, the shorthaul passenger building on the South-East Face, and the Operation Block, which during its construction was called the Eastern Apex Building, a clumsy title changed, I am glad to say, by Her Majesty to 'Queen's Building', when she inaugurated the first stage of the project—as you see it now.

First, let us consider the Control Tower. We seized the opportunity of having a separate control building to segregate all the administrative and technical side of the airport from the commercial and operational side. The Tower, therefore, houses not only the Aerodrome and Approach Control activities associated with Control Towers the world over, but also the Airport Administration, the maintenance of the Airport's Radio and Telecommunications Equipment, the medical set-up and the canteen for the staffs of the operators, the Ministry and all those employed in the Centre. It feeds close on 5,000 a day.

In planning the Traffic Control Organization in the Tower we had to think quite a way ahead. We have left ample room for advances in electronics, and we have provided not only plenty of ducting and channels of all sorts, but also false

floors in all the relevant places, so that when existing equipment becomes out of date there will never be any difficulty over pulling it out and replacing it with new. Time prevents me from going at all deeply into the mysteries of Air Traffic Control, the airways which cover the country, like three-dimensional railways in space, and the many intricate navigational devices on and off the airport. But perhaps I may be pardoned for digressing for a moment quite non-technically into the fascinating realm of Radar. May I tell you briefly what happens to an aircraft arriving at London Airport from the south in thick weather?

Our aircraft is taken over by London Radar, which is sited physically on the airport but forms no part of the set-up, from the French Area Control at a point somewhere about Abbeville. London Radar, of course, can see much further than this if an aircraft flies high enough to defeat the curvature of the earth, and I well remember London Radar picking up John Cunningham, de Havilland's Test Pilot, on his return from Castel Benito in the brand new *Comet*, when he was eight miles up and bang over Paris.

London Radar will watch our aircraft as she flies along her Aerial Highway, and will give her such information and instructions as are necessary till she reaches the Southern Holding Point over Epsom. She will then be told to change to Approach Frequency. Approach Control live behind the long bow window on the sixth and seventh floor of the Tower, and the Approach Controller takes over the aircraft on her way from the holding point, where she may have been stacked, until she is lined upon the centre line of the runway and about eight miles off. At this point the Precision Approach Radar takes over. The P.A.R. is at present operated from a G.C.A. van by the side of the runway in use, but before long an improved version will enable the Radar picture to be 'remoted' into the Tower.

Safely down, the aircraft is told to turn off the runway and change to the frequency of Aerodrome Control, who live in the little glass button on top. It is not often that the final piece of Radar, the Aerodrome Surface Movement Indicator, is called into use but, on occasion, like all Londoners, we can be the victims of a London fog, so that an aircraft which has landed in visual conditions finds suddenly that she can barely see the taxiway lights. The A.S.M.I. now comes into play and every move of the aircraft can be watched and corrected until she reaches the apron. The A.S.M.I. is a very sensitive instrument. It can not only pick up aircraft but it can spot vehicles driving where they should not, and once on a windless day in impenetrable fog it got a mysterious echo, showing that somebody or something was footloose in the fog. The A.S.M.I. operator was able to home a radio-equipped vehicle on to the object, which proved to be a policeman hopelessly befogged and travelling in irregular circles.

The design of the first of the passenger buildings was based on certain fundamental concepts, some of which were quite new, while some in one form or another had been tried at other international airports here and abroad. One principle was that luggage and passengers should not cross each other, but should be on different levels except where they had to meet, namely in the Customs Hall. There is, of course, a fundamental difference between luggage and passengers. Passengers have legs and are tall while luggage has no legs and is



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Exterior view of the South East Face Passenger Building of the Central Terminal Area of London Airport, designed by Frederick Gibberd, F.R.I.B.A. The control tower may be seen top right

short. Therefore, when the contents of an aircraft are being fed through the controls, passengers can walk up a gangway but must have room to stand, while luggage can be pushed through a pretty small hole, but must be carried either by manpower or by a conveyor belt. The second concept was that all the formalities could be speeded up if an aircraft load of passengers and luggage could be kept together and shepherded from the time they leave the aircraft until they begin filtering through the controls, health, immigration and customs. The third concept was that the channels through which passengers enter the country should be reversible, so that outgoing loads could also be kept together in their passage through the controls to the aircraft.

The channel system we invented to meet these concepts has worked particularly well for incoming passengers. Provision of separate waiting rooms, a straight journey through the controls and automatic two-level handling of passengers and luggage, has done away with the experience, so common at arrival airports, of a crowded customs hall full of passengers engaged in the agonizing task of identifying their porter, claiming their baggage, catching the eye of a customs officer and queueing for the polite but harassed immigration man.

A passenger landing at London Airport is led through the 'airside gallery'

to his 'airside waiting room', where he waits for the few minutes required for the luggage to be unloaded by the airport-hands, brought across the apron and fed into the conveyor serving his channel. The stages of his journey are timed so that the first passengers have passed through the immigration and health formalities, and are entering the customs hall at the same time as the first pieces of luggage are emerging from the pipeline. The customs officers can be reinforced laterally if any one customs channel is taking rather too long to clear, and we wage a continual battle against time. We rather think—but may be a bit optimistic—that we have reduced the time spent by Mr. Smith between the aircraft and his bus or car to just about as little as possible, given normal human reactions and the laws of gravity.

Outward clearance formalities have been growing simpler and simpler as European political conditions have eased, and the only outward control strictly enforced to-day is that of currency. This is, no doubt, a vital control at present, but it does not use much space and, of course, we hope that even currency control will not last indefinitely. It may be, therefore, that a much simpler organization would suffice for departing passengers who, in any case, arrive individually and not in aircraft loads, and may well in time develop the 'trickle feed' characteristics of the tube rather than the lordly ways of the Pullman. Of course, all outward passengers must be held at the airport while the load



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Interior of the South East Face Passenger Building

calculations are being made, since aircraft, as Mr. Weller Senior said of coaches, are like guns and must 'be loaded very carefully before they go off'. The answer might be to separate the arrival and departure buildings, but this solution is unpopular with operators since it involves towing.

The first half of the passenger building was ready for opening in the spring of 1954, and we were all hard at work testing the foolproofness of escalator belts, passenger flow, luggage flow, stand allocation and channel allocation. Our biggest customer, B.E.A., wisely, as it turned out, asked us to delay the changeover from the North Terminal until the Easter rush was over, so that we could start at a low level of traffic and work up. We did, and it is as well we did, for everything went wrong. We suffered from the fallibility of the human understanding on the part of ourselves and the passengers and from the malignancy of so-called inanimate objects—notably escalators that stopped, conveyor belts that stretched and luggage that deliberately lost itself. Aircraft were directed to the wrong stands, luggage went into one channel and passengers into another, and in general it did not come right on the night. Only one element functioned really well, the Press. It went on strike and stayed on strike, while Sir John D'Albiac and his troops attacked on all fronts simultaneously for five days and five nights. They succeeded, and since then, with occasional minor lapses, the machine has worked well. Some say that considering the size and complexity of the traffic it handles, it is the smoothest machine in aviation. We only say that it does all its designers hoped, and, thanks to the improvising flair of the staff, a bit better into the bargain.

One of the control points on the building was designed for the double duty of allotting stands for incoming aircraft and also allotting the appropriate channel for the passengers. Our first few days showed that this was too much of a load for one control and in fact, until that problem was solved, the strain on 'management control' was so great as to endanger health. We consulted a psychologist, who advised the attendance of goldfish in a tank as a sedative. It was extraordinarily successful, I do not quite know why, and if anyone in the audience feels minded to investigate our machinery for passenger handling (in which I am sure he will be welcome) he will still see a tankful of goldfish exercising their benign influence over an occasionally harrassed control staff.

The practical solution we found was to hand over stand allocation to the face supervisor, whose original responsibility embraced only the airport-hands on the apron, leaving to management control the allocation of channels. Both controls are hooked up with aerodrome and approach control in our communication system, and the new arrangement has worked perfectly from the start. Why we did not think of it earlier no one will ever know.

The third of the new construction buildings, Queen's Building, need not detain us long. It has two main functions; it caters for, and feeds, the visiting public, of whom some three-quarters of a million have already passed through its doors *en route* for the roof gardens or the restaurant, and it houses the air crews and their concerns, rest rooms, snack bar and so on, customs clearance, ships' papers, meteorology, briefing, and the B.E.A. operations room, which they have



[By courtesy of Crown Film Unit : Crown copyright reserved]

London Airport Central, Queen's Building, seen from the control tower

not yet occupied. Incidentally, it contains the Press Room, where most of the best known statesmen of Europe have given Press and Television interviews, and it has a news cinema which we hope to get into commission next season.

Few big projects end up as planned, and London Airport is no exception. Aircraft grow larger and are more densely seated, so that turn-round times, and therefore stand-occupancy on the apron, grow longer. Consequently, round the diamond we are growing short of apron space. Moreover, I think we must accept that the early plans underestimated the parking problem, aggravated as it is by the enormous number of sightseers who come in cars. In addition the use of the outer stands, involving a bus journey from terminal to aircraft, though logical, has never been popular with the public or the operator.

So a good deal of anxious thought has been put into the problem of anticipating the potential limiting factors in the growth of the Airport. Runway capacity should be sufficient; air-traffic control yearly becomes surer and more mechanized, though it is always working against the collar. But apron space must be increased, and this is now possible because the increased crosswind toleration of modern aircraft will make it possible to put out of commission one runway and possibly two, thus giving us more space for aprons and the possibility of more elbow room inside the diamond, but without sacrificing the requirements of organic and cohesive design. The next step to take is to bring into the middle the long

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haulers at present at L.A.P. North; and their removal will give opportunities for experimenting with the finger system and with the simpler organization for outgoing passengers now made possible by the relaxation of some of the post-war controls.

Finally comes the question of access from London. It has long been a general and very just complaint that the driving time from Waterloo Air Terminal to the airport is longer than the flying time from London to Paris. Very shortly, the state of play here is as follows. The first attack has been by road. The Cromwell Road extension has been pressed on, and but for a few unfinished bits and pieces will take you fairly direct from the new B.E.A. Air Terminal at the Cromwell Curve (itself a far better jumping-off place than Waterloo) to the Great West Road. I cannot give figures because the petrol shortage has artificially speeded up all London motor traffic, but, as a rough shot, I should say that the new road has cut a quarter of an hour off driving time. Later, when the South Wales Radial Road comes into being, with its spur road leading into the airport, the time will be further cut, but we may have some time to wait for this. The second possibility is an extension of the railway route Victoria-Clapham Junction-Barnes-Feltham under the airport by tunnel into an underground station joined by escalators and 'travelators' to the passenger buildings. The third possibility



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A Vickers Viscount takes off from London Airport

is one of the suspended monorail systems, running over railway tracks or high-ways; but whatever solution is ultimately adopted, no one is under any misapprehension on the importance of quick transit time from City centre to airport. That a passenger to Paris by *Viscount* in 1957 takes as long from door to door as he did by *Hannibal* in 1937, is something under which we must not continue to sit down.

I have had to be indecently selective. I should have liked to tell you of our approach lighting system, copied now in so many foreign countries; of the arrangements in hand and projected for fuelling the hundreds of aircraft we handle every day; of our close relations with the communities represented round the airport by means of an energetic Consultative Committee, and of our successful and unsuccessful attempts to eliminate the bugbear of the aerodrome authority, NOISE. But I have had to leave these out.

It remains to say that we have built something of adventure and something even of fun into all our thinking about London Airport. Not everything to-day is turning out for this country as her countrymen might have hoped, and there is a good deal of gloomy talk going around on various subjects. But in London Airport we in the Ministry, inspired perhaps by an overdose of parental affection, think we have created something of which we all can be modestly, but not too modestly, proud.

DISCUSSION

MR. G. VIVIAN DAVIES: We have had such a magnificent talk that I hate to say anything critical, but I am a very good customer of B.E.A., and I must say in some respects I have to compare London Airport rather unfavourably with Schiphol (Amsterdam), Lohausen (Düsseldorf), Zürich and Geneva. There seems to me very much more hanging around at London Airport than there is in these other airports. You seem to be able to go through in about half the time, and frequently, particularly in Lohausen, you can go and have a coffee or a drink with your friends and be called almost straight on to your plane. The same thing happened to me in Geneva, where I accepted a last-minute cancellation of a seat and went straight through Customs and on to the plane without any hanging about at all. It was the nearest thing to catching a train.

I usually go to London Airport by car because the journey by coach is frightful: first you have to get to the Waterloo Air Terminal, where you have to arrive about a quarter of an hour before the coach leaves; the coach then takes about fifty minutes and at the other end there is an even longer wait. I can do it by car in half the time, but there is a problem here and that is, what do you do with your car? Now at some of these airports on the Continent, they have an arrangement whereby you leave your car, and a chauffeur comes along and takes it into a covered garage, not necessarily on the airport. I thought of the same thing when I was going to Düsseldorf recently, as I did not want to leave my car for days in an open car park. I rang up various garages around London Airport and one said that they would do it, although it was a lot of trouble, if I would give them a job to do on the car while I was away, as they were so short of work. I therefore called at the garage, picked up a driver, and he took the car back from airport to garage. It seems to me the airport authorities could come to some arrangement with a big garage nearby to provide this service

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at a reasonable cost. The car need not necessarily be brought back, because a taxi from London Airport to a local garage is easily obtainable.

At these Continental airports you have not got to go everywhere by bus, and you can walk on and off your plane. I am told that one of the disadvantages of the apron-type construction is that it makes this impossible.

THE LECTURER: Really there are three questions. One is the question of the use of buses for the outer stands at the airport, which I have dealt with a little. That was a part of our first concept, and I think as we enlarge the airport we may move away from it; but it is significant that we have had a recommendation by the International Airline Pilots Association to the effect that the big American jets that are coming are so noisy as to necessitate parking them at least a quarter of a mile from the terminal and taking everybody there by bus. If so, we may not have been far wrong. But, of course, for small aerodromes the finger system which we have not adopted at London, but are adopting at Gatwick, may be the answer. Because we are always experimenting, we shall soon discover.

Now taking your other point about bringing your car and having it taken to a garage. I had a long talk with the authorities at San Francisco about that. They said that they used to do it, but they had so many complaints that they found that it just was not worth doing. We have often thought of it, though, and it is a jolly good question.

Now about the length of time it takes—I rather cross swords with you on one point. Coming in, we have got the time down to 17 minutes through Customs, health and immigration. We take the view that when going out you must wait until the load calculations are finished. That is bound to be a long job and one that must be done by all air operators.

MR. ARTHUR PRIESTLEY: The maintenance buildings are all shown as on the east side of the aerodrome; the places where the noise of engine testing is troublesome are on the east side of the aerodrome. What was to prevent the maintenance buildings from being put on the south-west side, where the prevailing wind would obviously persist for most of the time and allow some of the engine noise to dissipate before it got to the houses? It seems to me odd that the source of noise was put near to the houses without any chance of the sound going across the aerodrome first.

THE LECTURER: That is a very sensible point too. There are two maintenance areas: one is in the east and the other is on the south, and the next one we shall develop, I think, will be an area further west: there the original plan was for a fuel base, that is why we did not want hangars there. On the extreme west of the airport there was already located a sludge works.

MR. W. M. HARGREAVES, C.B.E.: On the question of access, I was disappointed not to hear the lecturer say anything about the extension of the tube line, because I have found in my journeyings these last three years that coming in by tube from London Airport, once you get on the train it takes only 35 minutes to Green Park. I should have thought that if a tube station was built somewhere near the hangars we might be able to do that journey in forty minutes fairly comfortably.

THE LECTURER: We tried that one, but it really means a completely new tube. You cannot hold up one of the busy London tubes to put on through trains to London Airport, and if you do not have a through train to London Airport you stop approximately every one and a half minutes, and it is really longer than going by any other way. A complete through tube line would cost about £4 million a mile, which would be rather a heavy burden on the taxpayer.

MR. F. S. SNOW, O.B.E.: The new B.E.A. depot at Cromwell Road may make for

a quicker journey to the airport for the people who live that side of London, but it is certainly going to be much longer for those like myself who live south of London. Personally, I prefer the Waterloo site. It is much more central, and for the foreigner who has come to London all the lights and fun and gaiety which appear to be going on round County Hall make this a much better approach to London than the Cromwell Road one would be. So I have often wondered why the move there has been decided on.

Overhead runways, of course, are going to be completely out of bounds on all questions of costs. We went through this with Mr. Binnie, the original inventor, who constructed a prototype at Milngavie some years ago; and by the time you work out the stresses on a suspended monorail except as a show piece and in very exceptional circumstances, I am quite sure the thing will never pay.

THE LECTURER: The bodies who are interested in bringing their passengers to the airport are the Airlines; and B.E.A., who are the main users of Waterloo, think that the Cromwell curve is a better place for them; but another reason is that an oil company are putting up a big building just about where the Waterloo terminal is, so we have no choice. With regard to the cost as between a new railway and a monorail, the studies that we have had so far do not bear out your arithmetic. Your arithmetic may be better than theirs, but in fact that is not what we have gleaned from the studies we have made.

THE RIGHT HON. LORD GEDDES (President, Institute of Petroleum): One impression of London Airport is of the number of tank lorries scattered all over the place. Are there plans for a network of fuel pipe lines with extensions generally to the aircraft stances, or is it intended to fuel more or less permanently by mobile supply?

THE LECTURER: All the air companies, and at all the big international airports, are asking themselves those questions, but once there is a static fuelling supply under 24 inches of concrete coming up through various holes, the next thing that happens is that the *Stratocruiser* or the *Britannia* goes out of action and the *Boeing 707* comes into action, and every single one of your static fuelling points is about eight feet off position and you have got to grub up the whole thing and start again. So except, in this country, for one very small but important aerodrome—Southampton—and practically nowhere abroad, the oil companies have not yet risked 'burning their boats' with a fully-built static fuelling supply because they just do not know what the size of the next aircraft is going to be.

MR. MARTIN A. BUCKMASTER: Is it a rule at the London Airport that you cannot see friends depart? I was there last week under very distressing circumstances to see somebody depart and I got no nearer than the customs. Is that a general rule?

THE LECTURER: No, there are two ways of seeing your friends depart. One is from what we call the Waving Base, which is specifically so-called because it is just outside the main passenger restaurant and you can wave from there. All you have to do is to go up one flight of steps through the bar of the main passenger restaurant. I do wish, Mr. Buckmaster, you had asked somebody, because they would have shown you right away. The alternative is to pay your two shillings and go on to the roof gardens where you can see everything.

A vote of thanks to the Lecturer was carried with acclamation, and, another having been accorded to the Chairman, the meeting then ended.

GENERAL NOTES

INTERNATIONAL COUNCIL OF SOCIETIES OF INDUSTRIAL DESIGNERS

Delegates from professional organizations of Industrial Designers in Denmark, France, Germany, Italy, Norway, Sweden, the U.S.A. and the United Kingdom, met in London recently, as the guests of the British Society of Industrial Artists, to establish The International Council of Societies of Industrial Designers. The aim of this new Council is to bring together professional societies of industrial designers in all countries and exchange information on the theory and practice of training students and their teachers in the field of industrial design, in order that this comparatively recent profession may be established on a sound basis. The policy of the Council is also to encourage co-operation between industrial designers, architects, painters, sculptors, engineers and other technologists so that work in these associated fields of creative design may be closely related.

The President of the first Executive Board elected by the delegates is Mr. Peter Müller-Munk, F.A.S.I.D., of the U.S.A. Mr. Misha Black, whose appointment to the distinction of R.D.I. was announced in the last issue of the *Journal*, has been elected Executive Vice-President; Signor Enrico Peressutti, of Italy, Vice-President, and M. Pierre Vago, of France, Secretary and Treasurer. The delegates to the meeting also accepted as Members of the Council professional organizations of industrial designers in ten countries, Canada, Denmark, France, Italy, Japan, Norway, South Africa, Sweden, the U.S.A., and the United Kingdom; and as Associate Members of the Council organizations concerned with the promotion of industrial design in India, Pakistan, and the United Kingdom. It is proposed to hold the first meeting of the General Assembly in Scandinavia in 1959.

THE CIVIC TRUST

Much interest has been aroused by the announcement that a body to be known as The Civic Trust has been formed for the purpose of encouraging good architecture and civic planning, and that the Trust has already an assured income of £40,000 a year, subscribed by industry. The Trustees who will administer these funds include Mr. Duncan Sandys, M.P. (President), the Archbishop of Canterbury, Sir Herbert Manzoni, Mr. Herbert Morrison, M.P., Sir George Nelson, Lord Justice Pearce, Sir Howard Robertson, Sir Edward Spears and Mr. C. M. Vignoles.

The Civic Trust, an entirely unofficial body, has been set up on the private initiative of Mr. Duncan Sandys. Readers of the *Journal* will remember his opening address to the Conference on 'Perils and Prospects in Town and Country' arranged by the Society on 31st October, 1956 (printed in the *Journal* for 21st December, 1956). On that occasion Mr. Sandys, then Minister of Housing and Local Government, drew attention to the dangers of public indifference. 'What we have got to do above all else', he said, 'is to arouse and stimulate a sense of civic pride throughout the country, so that the people of Britain will take an active interest in the appearance of their home town or village, and will positively insist on having what is good.' The Civic Trust has announced that it plans a number of activities to further this object: the commissioning of expert reports on architectural and town-planning questions, and the convening of meetings to discuss them; the arrangement of conferences in selected towns to discuss local planning problems and possibilities; the provision of publicity through the media of films, television programmes and travelling exhibitions; and financial help for appropriate activities of existing amenity societies.

FELIX IDUBOR EXHIBITION

An exhibition of sculpture by the Nigerian artist Felix Idubor is at present on view in the Pavilion of the Imperial Institute. Felix Idubor, who was appointed instructor in sculpture at Yaba Technical Institute, Lagos, last year, was born in Benin City in 1928, and has held several exhibitions in Nigeria. He was commissioned by the Federal Government to carve a casket for presentation to the Queen on the occasion of Her Majesty's visit to Nigeria in 1956. This casket will be on show at the current exhibition, together with about forty of Mr. Idubor's carvings. These are traditional in style, and the materials used are mainly woods from his native country.

The exhibition is open until 28th July at the following times: Mondays to Fridays, from 10 a.m. to 4.30 p.m.; Saturdays, from 10 a.m. to 5 p.m.; Sundays, from 2.30 p.m. to 6 p.m. Admission is free.

'THE TYPOGRAPHICAL ADVENTURE OF WILLIAM MORRIS'

This summer the William Morris Society, of which Sir Sydney Cockerell is President, is arranging an exhibition under this title, devoted to Morris's association with printing. It will be the first comprehensive display of this aspect of his work, designed to enable the public—including both those technically and generally interested in the subject—to assess Morris's influence upon good printing in this century. About 150 items are to be shown, divided into four sections covering (1) the period from *The Oxford and Cambridge Magazine* (1856) to the first edition of *John Bull*; (2) the transitional period in Morris's development as a printer, in which was devised the 'pre-Kelmscott formula' (this section will also include some account of Morris's contemporaries in good printing); (3) the Kelmscott period; and (4) an attempt to illustrate Morris's influence. An important feature of the exhibition will be the catalogue, which promises to be a valuable work of reference.

The Exhibition is supported by a number of industrial and commercial associations. It will be open for the first three weeks of August at the St. Bride's Foundation Institution, London, E.C.4, and thereafter at Leighton House, Kensington (19th August—17th September), at the Manchester Central Library (16th September—5th October) and at the Mitchell Library, Glasgow. There will be no charge for admission.

OBITUARY

We announce with regret the death of five Fellows of the Society:

CAPTAIN H. C. R. BROCKLEBANK

Captain Henry Cyril Royds Brocklebank, C.B.E., R.N. (retd.) died at Shaftesbury on 30th June, aged 83. The son of Thomas Brocklebank of Watlingbury Place, Kent, he was educated in H.M.S. *Britannia*, and in the First World War served in the 6th and 10th Cruiser Squadrons and then as Naval Attaché at The Hague. He was appointed C.B.E. in 1919, and had been a Deputy Lieutenant for Dorset, and a Justice of the Peace for both Dorset and Wiltshire.

Captain Brocklebank was elected a Life Fellow of the Society in 1919.

MR. F. N. HEPWORTH

Mr. Frank Nutter Hepworth, C.B.E., who died at Carlisle on 14th June, aged 85, was formerly chairman of the Metal Box Company, and for many years played an active and important part in the affairs of that industry.

After leaving Mill Hill School, at the age of 17, Hepworth joined the staff of Hudson, Scott & Son, the Carlisle tin box manufacturers, and subsequently became chairman of the firm. He was largely responsible for the formation of the Metal Box Company, and was elected the first chairman of the combine in 1921. At one time he was leader of the employers' side of the industry's wages council and president of the British Tin Box Manufacturers' Association. He was a member of the Board appointed under the Cotton Manufacturing Industry Act, and in 1945 he served on the committee of inquiry into the port transport industry. In 1946 he was appointed independent member of the Cotton Manufacturing Commission.

Hepworth was known as a benefactor of the arts and a keen and active supporter of the interests of young people. He became a J.P. for Carlisle in 1927, and for a long time was chairman of the juvenile court there. In 1946 he was made C.B.E.

Mr. Hepworth was elected a Fellow of the Society in 1931.

MR. W. O. PEAKE

Mr. William Oliver Peake, chairman and managing director of the clothing firm of W. O. Peake Ltd., died at Harpenden on 17th June, aged 78. From small beginnings, W. O. Peake Ltd., developed under his direction into one of the leading manufacturers in the clothing industry, with a large export trade under the name of Rodex.

Mr. Peake was elected a Fellow of the Society in 1934.

THE REV. G. S. RUSSELL

The Reverend George Stanley Russell, D.D., died at Toronto on 21st June, aged 74.

Born at Great Grimsby, Lincolnshire, in 1883, Russell was educated at Aberdeen Grammar School and Aberdeen University. After study at the United College, Bradford, he was ordained to the Congregational Ministry in 1907, and appointed Pastor of Hopton Church, Mirfield, Yorkshire. The memories of his friendship here with Dr. R. J. Campbell and of his happy relationship with the neighbouring Anglican Community of the Resurrection prompted his book, *The Monastery by the River*. After a highly successful period of service at St. Anne's-on-Sea, Russell went in 1915 to Grafton Square Congregational Church, Clapham Common. During his Clapham years he was chairman of the London Congregational Union, and ministered as honorary chaplain to the Tower of London, and to two hospitals.

In 1929 he went to Canada as Minister of Deer Park, Toronto, a great preaching centre. The Church of Canada had then only just been formed by the unification of Congregationalists, Methodists, and Presbyterians. Throughout his years at Toronto Russell, by his qualities of tolerance, understanding and sympathy did much to strengthen this unity. He will also be long remembered for his work among men and boys, notably in connection with the Boys' Brigade, the Boy Scout Movement, and the Imperial Veterans' Association of Toronto, to which he was honorary chaplain, for a number of years. Russell's name was familiar in print, as the author of numerous works on theology and practical Christianity, and volumes of the sermons which he delivered with such effect.

Mr. Russell was elected a Fellow of the Society in 1950.

DR. C. T. SELTMAN

Dr. Charles Theodore Seltman, Litt.D., formerly Fellow of Queens' College,

Cambridge, and a noted authority on Greek art and antiquities, died at Cambridge on 28th June, aged 70.

Born in 1886 and educated at Berkhamsted, Seltman served with the Suffolk Regiment in the First World War. At Queens' College, Cambridge, he gained first-class honours in the Classical Tripos, Part II, in 1921, was awarded the diploma in classical archaeology with distinction, and became Winter Warr Scholar and Prendergast Student. For the next few years he worked abroad, chiefly at the British School in Athens and at Olynthus, until, in 1926, he became a lecturer in Classics at Cambridge, and in 1933 a Fellow of Queens'. In 1936 he became Librarian of the college, and from 1940-41 he was Senior Proctor of the University.

Dr. Seltman directed two very successful exhibitions of Greek Art at the Royal Academy in 1942 and 1946. In 1945 he was awarded the Gold Medal of the Royal Numismatic Society, and in 1954 became medallist of the American Numismatic Society. His published works of scholarship were mainly concerned with Greek coinage and art, but he also did much in his writings to bring the culture of the ancient world in general within the comprehension—and enjoyment—of the non-specialist. His *A Book of Greek Coins* (1952), written for the King Penguin series, was an attractive example of this approach to a learned subject, and *Women in Antiquity* (1956) was a work stimulating and provocative to expert and non-expert alike.

Dr. Seltman was elected a Fellow of the Society in 1947. The Council awarded him a silver medal for his paper on 'The Appreciation of Greek Art', which he read to the Society on 27th February, 1946.

NOTES ON BOOKS

STONE SCULPTURE BY DIRECT CARVING. By Mark Batten. London, The Studio, 1957. 25s

Mr. Mark Batten's object is to fill a gap in the literature of 'How To Do It', on the technical aspects of Stone Sculpture. There is need for such a book, since none exist and since those practical workmen (I refrain from the terms 'artist' and 'craftsman') with lifelong experience of the manipulation of stones of various kinds are fast dying out and, through the effects of economic nonsense, social snobbery and government indifference, are not being replaced. Mr. Batten rightly stresses the workman rather than the fine art side but gives no useful guidance on how modern stone sculpture can fit into contemporary skin clad, framed structures, or what special developments there need be at the present time. The great heritage of stone sculpture in Britain from prehistoric times until the Reformation was the work of men whose whole training was as masons; and the works of art which they have left us they made working as master masons. But with the Reformation the requirement for, and feeling for sculpture in stone dwindled. It is only quite recently that interest has again been taken in the cutting of stone as an art form distinct from the imitation of modelling either by copying by hand, or, equally bad, by machine—usually to a much increased scale. But this is very different from stating that the stone sculptor must never model anything again—throughout the book there are a number of such illogical views put forward by Mr. Britten. Any means and techniques are legitimate which produce the right results. The young sculptor will soon discover whether the modelling technique of building up in a plastic material or the cutting technique of extracting his form from a block of material (it need not be stone) suits his own particular personality best.

Given the need for such a book, and the reader's wish to understand and acquire the technique necessary to express himself in so intransigent a material, will he find what he needs in the present work? Unfortunately not in a great measure. It is disjointed, not everything is dealt with, and what is, not thoroughly. Great sections

are omitted altogether: for example, alabaster carving is not mentioned, yet at one time the York School was as internationally famed as Henry Moore (and without any organized official support). Nor are jade or intaglio cutting dealt with; nor is the colouring of stone, practised by the Egyptians, Greeks and Goths. There is little critical analysis of methods or reasoned guidance on, for example, the suitability of polishing, which can either enhance or mar a work. Although granites, limestones and sandstones are considered, the information given is inadequate and disjointed; while the author has an irritating habit of mentioning something (for example, the correct bed of a stone), and saying he will deal with this later.

The photographs of ancient and modern cutting touch on the fringe of a subject which could well have been expanded—did Phidias finish his marbles with a point or an abrasive? Did Michelangelo use a riffler? The illustrations, an interesting set, hardly support all of Mr. Batten's theses and sometimes disprove them: for example, the beautiful Indian torso on page 80, which might well be a bronze casting. As is unfortunately usual, the illustrations give no indication of scale, which is fundamental to sculpture, nor relationship with human scale. The Egyptian granite head on page 78 appears to be of similar size to the Central American work on page 79—but is not.

The book might prove a useful Christmas present; but the serious student will have to go elsewhere for most of his knowledge, and would probably be better served were the postman to bring him a large-sized block of Bianco del Mare, a chisel and a lump hammer.

LOUIS OSMAN

GRAPHICAE OF 1956. *Edited by Alfred Bastien. West Drayton, The Typographical Centre. 20s*

This is an impressive, enthralling, and exasperating book. It consists of two copies, numbers 2 and 3, of a journal bound into one simply by gluing them together in a card cover, which unfortunately results in a fat volume of about three hundred pages which will not open properly or stay open in the hand. It contains a medley of typographic facts and fantasy, and an extensive collection of alphabets of English and Continental type faces, mostly modern or recent, which could not be matched elsewhere. Mr. Bastien's book is valuable on this score alone, to typographers, of course, and to everyone interested in letter design and the trend of modern development in this field.

Besides the alphabets, the book includes a number of chapters or articles, apparently all by the same hand: for they are all written in the same contrived and ponderous language, which too often descends into a private jargon. For example, one chapter is entitled: 'The Queen's English—instrument of modern cultural exchange and potential world language—alphabetics documentation preserves purity in graphium'. Possibly this means something, but it is a pity that the author should be addicted to this sort of double-talk, because it is plain that he has enormous enthusiasm for his subject, he has a lot of knowledge and experience, and he has got something to say. His interpretation of what he calls 'alphabetism' covers not only the design of type faces, but much more—in fact, his interest extends wherever the roman alphabet is used for any purpose. For instance, he advocates a new kind of road sign adapted to the increasing tempo of modern travel. This sign, which should be erected at frequent intervals on our high roads, would bear the name of the approaching town very much abbreviated to produce a large and simple mnemonic of four or five letters instantly recognizable by the motorist who, when he sees, let us say, BMHM, will know that he is on the right road for Birmingham. The author is also interested in the lettering used on the name-plates of our streets, which could certainly do with

improvement; and he is concerned about handwriting and the movement towards a more handsome and legible italic hand.

He has, naturally, many comments to make on the use of type in advertising and elsewhere; and he suggests that type should be used as a model for inscriptional lettering, a reversal of an historic pattern which is not the impertinence that some sculptors might take it to be. Indeed, in everything he says, Mr. Bastien should be taken more seriously than his odd style of writing may suggest.

SEÁN JENNETT

FROM THE JOURNAL OF 1857

VOLUME V. 17th July, 1857

MECHANICS' INSTITUTES

From a letter signed Ephra

Many Institutes are attempted to be carried on upon rates of subscription so ridiculously low that under no circumstances can they be carried on without large gratuitous aid, which tinges them with the idea, at all times repulsive, of their being charitable Institutes. This has arisen from the fatally mistaken notion that cheapness is any recommendation. At the poorest night school in the country the charge is 3d each for attendance, and yet many Institutes, professing to give class instruction, with the use of a library, reading-room, and occasional lectures, charge only 1d a week, and rely for support upon the occasional guineas of wealthy and benevolent neighbours. What is worth having is worth paying for, and is not the less esteemed for the sacrifice which is made to obtain it. At Huddersfield Mechanics' Institute the charge is 3½d a-week for little more than class instruction, and yet the lads who earn but a few shillings a-week are found to be the best-paying members. In a population of about 16,000 the Institute has more than 1,000 members, and the difficulty is rather to find room than to find students. At Sheffield there are three Institutes, the charge for classes being 3d and 3½d a-week, and the same difficulty exists in finding room rather than anxious learners. In many Institutes the Committees have been deterred from raising the rates of subscription through fear of losing members, but I believe such fear to be groundless, as I have known many instances in which it has been tried, and in each case it was attended with an increase of members instead of a decrease.

LIBRARY ADDITIONS

FINE ARTS (GENERAL)

WILDENSTEIN, GEORGES, *compiler*—Ingres. London, Phaidon Press, 1954.

WILENSKI, REGINALD HOWARD—Dutch painting. Revised and enlarged ed. London, Faber, 1955.

WILLIAMSON, GEORGE C.—Frederic Lord Leighton. London, George Bell and Sons, 1902. Bequest of Miss V. M. M. Vicat Cole.

AGRICULTURE AND GARDENING

ABERYSTWYTH (*University College of Wales*). Welsh Plant Breeding Station. The ryegrasses in British agriculture: a survey by A. R. Beddows. *Aberystwyth, Welsh plant breeding station*, 1953.